STATEMENT OF WORK
FOR
FULL MAINTENANCE AND REPAIR SERVICES
OF THE
ELEVATORS, ESCALATORS AND MOVING WALKS
AT
RONALD REAGAN WASHINGTON NATIONAL AIRPORT

PREPARED BY: Metropolitan Washington Airports Authority

Ronald Reagan Washington National Airport
Engineering and Maintenance Department (MA-120)
Maintenance Engineering Division (MA-126)
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SECTION II - INTRODUCTION AND SUMMARY OF WORK

01 INTRODUCTION

The Metropolitan Washington Airports Authority (the Authority) is responsible for the operation, maintenance and repair of Ronald Reagan Washington National Airport (the Airport).

The Authority’s goal for the Elevator, Escalator, Moving Walk Systems ("EEMWS") is to provide safe, high quality and reliable services to all Airport users and to achieve excellent customer satisfaction. The Authority’s objectives to accomplish this goal are as follows:

- To accomplish EEMWS operation and on-site maintenance and repair functions through a single service contractor.
- To maintain EEMWS in safe and reliable condition at all times.
- To respond to service calls and perform the necessary repair or action effectively and efficiently.
- To establish and implement an effective quality control program that results in continuous improvement in system performance.
- To know the operational status and functional performance of the EEMWS at all times.
- To maintain accurate equipment maintenance and repair activity documentation and records.

Terminal B/C elevators, escalators and moving walks became operational in July 1997. The Terminal A Pedestrian Tunnel elevators, escalators and moving walks became operational in September 2001. Two elevators located in Hangars 5 and 11 were installed in 2008 and 2006. Units located in the out buildings were installed prior to 1997 (Appendix B).

02 SUMMARY OF WORK

The contract is intended to provide complete full maintenance and repair services, preventive maintenance services, 24-hour callback and safety code inspection support services for the EEMWS as described herein at the Airport. The Contractor shall provide all supervision, labor, administrative support, materials, tools, parts, supplies, equipment, and transportation necessary to effectively and efficiently fulfill all the requirements of this Statement of Work (SOW) at the Airport.

The elevators, escalators, and moving walks included in this contract vary by manufacturer, model, age, size, and performance characteristics and are subject to intense use in operating times and passenger loads which most properties and equipment do not experience. Consequently, the elevators, escalators, moving walks, and associated systems and equipment included in this SOW require a significantly higher degree of preventative maintenance, service, repair, inspection, and testing than typical commercial installations.

The term of this requirement is intended to consist of a one (1) year base period with four (4) one (1) year option periods.
SECTION III - DEFINITIONS

AIRPORT – Shall refer to Ronald Reagan Washington National Airport, aka, “DCA” as described in the SOW.

AOA - Aircraft Operation Area - The portion of the Airport used or intended to be used for landing, takeoff or surface maneuvering of aircraft. This is a security area requiring a security badge for access. Workers in this area are required to obtain and display an AOA photo ID credential. Drivers in this area are required to obtain an Aerodrome Vehicle Operator’s Permit. Vehicles operated in this area are required to pass a safety inspection and meet the vehicle identification marking and equipment requirements for operating on the AOA.

ATCT – Air Traffic Control Tower.

AUTHORITY - The Metropolitan Washington Airports Authority

AUTHORITY ADMINISTRATIVE WORK HOURS - The hours of 6:00 AM through 4:30 PM EST/DST, Monday through Friday, excluding weekends and holidays.

BARCODE SYSTEM - Authority provided computerized Bar Code Data Collection System used to document the maintenance, repair and safety code inspection support activity for each piece of equipment covered under this contract.

CALL ORDER – All Supplemental Services require a COTR signed Call Order. The Call Order contains a detailed description of the services to be provided, cost estimate, and schedule required from the contractor for any work performed under Supplemental Services.

CLEAN – The absence of dirt, litter, debris, dust, surface marks, fingerprints, spills, oils, gum, grime, film, stains, streaks, spots, blemishes, chemical residue, and/or any other foreign matter or chemical residue that can be removed without permanently damaging the underlying surface.

CMMS - Computerized Maintenance Management System used to schedule and generate work orders for all maintenance and repair activities performed for each piece of equipment covered under this contract.

CONDITION SURVEY - Inspection of equipment performed by the contractor to identify deficiencies in equipment construction, installation, condition, and/or performance and shall establish a documented baseline report of deficiencies to serve as a “benchmark” for the Contractor to provide ongoing maintenance.

CORRECTION – Elimination of a deficiency

COTR – Contracting Officers Technical Representative (COTR).

DCA - Ronald Reagan Washington National Airport

DEFICIENCY – Any condition or operational flaw that is non-compliant with ASME A17, ANSI, NFPA 70, or OEM maintenance or condition guidelines.

DUTY HOURS - The Contractor shall provide the required on site presence during the hours of 6:00 AM through 10:00 PM, Monday through Friday and from 9:00 AM to 5:00 PM Saturday and Sunday including holidays to fulfill the requirements of the contract.

EEMWS – An acronym for the term Elevator, Escalator, and Moving Walk Systems. These EEMWS are limited to the elevators, escalators, moving walks, and accessibility lifts systems specifically located at the Airport.
ENTRAPMENT – Any instance where one or more persons is reported to be trapped in an elevator.

FEDERAL AVIATION ADMINISTRATION (FAA) - The federal branch of the government responsible for the regulations and procedures related to air transportation.

HCS - Hazardous Communication Standard also known as “HAZCON”.

JOB SITE - The area within the Authority’s property lines or portions of such area, which are defined within the contract.

LITTER - Debris, waste paper, rags, dust, dirt, beverage containers, trash etc.

MA-126 - Contract Services Section, Engineering and Maintenance Department, Maintenance Engineering Division

MSDS - Material Safety Data Sheet

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY (the Authority) - The public body responsible for the operation and management of both Ronald Reagan Washington National Airport (DCA) and Washington Dulles International Airport (IAD).

OEM – Original Equipment Manufacturer

OPTIONS - Requires the Contractor to perform the all contract requirements listed in the Base Services section of the contract to other designated equipment or during other designated time frames.

OSHA - U. S. Occupational Safety and Health Administration. The Federal Government agency responsible for providing the rules and regulations on safety and health requirements in the work place.

PRIMARY TERMINAL OPERATING HOURS - 6:00 AM through 11:00 PM EST/DST, daily 365 days a year (includes weekend and holidays). The terminal is open to the public 24 hours a day, 365 days a year.

QUALITY CONTROL PROGRAM - A method used by the contractor to assure that quality services are provided that satisfy the contract requirements.

QUALITY ASSURANCE - A means by which the Authority is able to confirm that the quantity and quality of services received conform to contract requirements. These methods/procedures are not intended to aid the contractor in the performance of the contract requirements and shall not be a substitute for Contractor quality control.

SERVICES - Includes services performed, workmanship, materials and parts furnished or utilized in the performance of services.

SOW – Statement of Work

STATE - The Commonwealth of Virginia

VANDALISM - Willful or malicious abuse and/or destruction of property.

WORK ORDER DESK - Unit that is primarily responsible for receiving, dispatching and tracking service requests. (703) 417-8063
SECTION IV - BASE SERVICES

01 DESCRIPTION OF SERVICES

The Contractor shall provide all supervision, labor, administrative support, materials, tools, parts, supplies, equipment and transportation necessary to perform all maintenance and repair services, preventive maintenance, 24 hour callback and safety code inspection support services, in addition to documentation, monitoring, and reporting of equipment activity and services described herein on all EEMWS at the Airport.

02 FULL MAINTENANCE AND REPAIR SERVICES

A. The Contractor shall be responsible for performing all maintenance and repair work required to maintain the EEMWS in the condition prescribed by the original equipment manufacturer’s recommended guidelines to include all items, fixtures, lights, receptacles, switches, finishes, components, systems and subsystems (including pit sump pumps and associated controls), erected hoistway construction and machinery rooms/enclosures of elevators, escalators and moving walks.

B. The Contractor shall maintain all equipment covered by this contract in compliance with the requirements of ANSI, ASME A17, NFPA 70 and all other applicable codes, laws and regulations.

C. The Contractor shall provide all non-vandalism replacement parts which are required to maintain, repair and keep the EEMWS fully operational and free of deficiencies unless otherwise stated in the SOW.

D. In addition to the work encompassed by 02. A, B, and C, the following work items/repairs shall be included as part of Base Services and shall be performed at no additional cost to the Authority:

1. Re-set activated safeties
2. Re-set activated fireman’s recall
3. Respond to equipment running on arrival
4. Respond to entrapments
5. Requests for unit shutdowns or restarts
6. Requests for access to equipment from MWAA maintenance sections
7. Removal of foreign objects (i.e. keys, identification badges etc.) from equipment pits

E. Requests for service will be dispatched by the Authority to the Contractor. However, the Contractor shall also be responsible for initiating and completing required repairs to correct all deficiencies that they discover while on the job site.

03 PREVENTIVE MAINTENANCE SERVICES

As part of Base Services, the Contractor shall perform and maintain a detailed cyclic preventive maintenance program for the tasks specified in Appendix F of the SOW. The preventive maintenance program shall consist of the following three parts:

1. Schedule
2. Task and Frequencies
3. Corrective Action

1. Schedule

A. The Contractor shall follow the Authority’s CMMS generated preventive maintenance schedule. The Authority will provide the Contractor with standing work orders for the scheduled preventive

Attachment 01 – Statement of Work Section IV-1
maintenance services at the beginning of each month. The Contractor shall perform these preventive maintenance work orders within plus or minus 2 days from the last cyclical date the maintenance was performed. Should the Contractor have recommended changes or additions to the preventive maintenance schedule, the contractor shall notify the COTR in writing and provide complete information and justification for the changes.

B. During Contractor duty hours no unit shall remain out of service for preventive maintenance services without the presence of technicians performing work.

C. Preventive maintenance shall be performed as stated on the equipment listed below:

1. Escalators 62, 63, 71, 72, 73 and 74 - Annual preventive maintenance work shall be performed in a continuous 24-hour a day nonstop manner until completion of all tasks. The units shall not be out of service without the presence of technicians performing work.

2. ATCT Elevators 43 and 44 - All preventive maintenance work shall be performed between the hours of 11:30 PM and 4:00 AM and shall be scheduled in advance and approved in writing by the COTR.

3. Loading Docks A/B/C Elevators 1, 58, 99 – All preventive maintenance work shall be performed after 2:30 PM.

4. Daily and weekly inspections shall be performed at the beginning of the first shift of the day.

D. The Contractor shall utilize a tread cleaning machine on sixteen (16) moving walks each month between the hours of 6:00PM and 10:00PM for pallet cleaning. The Contractor shall allow the tread cleaning machine to run on each unit for a minimum of two (2) hours per frequency. The tread cleaning machine shall be stored out of public view at all times when not in use.

E. The Contractor shall not schedule any EEMWS units to be out of service for preventive maintenance the week before or the week following the Thanksgiving holiday and the Christmas holiday unless approved in advance by the COTR.

2. Tasks and Frequencies

The Contractor shall follow the Authority provided tasks and frequency guidelines shown in Appendix F to perform and accomplish the preventive maintenance for all equipment included in the SOW. Should the Contractor have recommended changes or additions to the information in Appendix F, the Contractor shall notify the COTR in writing and provide complete information and justification for the changes. Approved changes will be added to the SOW through a contract modification. The Contractor shall post a copy of the resulting final approved tasks and frequency guidelines on the job site for the Contractor employees’ information.

3. Corrective Action

All deficiencies discovered during the performance of daily/weekly inspections and preventive maintenance shall be documented with a CMMS work order.
04 INSPECTION SUPPORT

A. As part of Base Services the Contractor shall provide ASME A17 safety code inspection support services during the contract period to assist the Authority in accomplishing scheduled and unscheduled post incident, fire device, routine, periodic, and 5 yr ASME A17 safety code inspections on all equipment covered by this contract. The Contractor shall provide all supervision, labor, administrative support, materials, tools, parts, supplies, equipment, and transportation necessary to accomplish this requirement.

B. A separate, independent Authority procured, directed and paid Safety Code Inspection Contractor shall witness the ASME A17 safety code inspections.

C. The scheduled routine and periodic ASME A17 safety code inspections support shall not be performed by the onsite personnel assigned to perform the Base Services portion of this contract. ASME A17 inspections shall be carried out in addition to Base Service tasks and responsibilities and there shall be no delay or other impact on the performance of Base Service tasks and responsibilities because of the ASME A17 safety code inspections support.

D. The repair of all non-vandalism violations discovered during ASME A17 safety code inspections shall be the responsibility of the Contractor. The Contractor shall immediately repair/correct all violations discovered during the ASME A17 safety code inspections and schedule a re-inspection within ten (10) business days from the date of the first inspection. The Contractor shall notify the COTR in writing (e-mail) when the repairs are completed and request a re-inspection.

E. The Contractor shall document all violations discovered during the ASME A17 safety code inspections using the Barcode System, create a CMMS work order for all violations/deficiencies and notify the COTR (e-mail) before the end of the shift on the day they were discovered.

F. All units shall be inspected, violations/deficiencies corrected and pass ASME A17 safety code inspections during the month they were scheduled for inspection.

The schedule for ASME A17 Safety code inspections are as follows:

All Units:

Periodic Code Inspections – April
Routine Code Inspections – October
5 Year Code Inspection – April 2016

1. FAA Tower traction elevator (Unit 43) and the TRACON hydraulic elevator (Unit 44) inspections shall be performed between the hours of 11:30 PM and 4:00 AM as scheduled by the COTR.

2. Parking Garages A, B and C elevators (Units 29,30,31,32,46,47,48,49,50,51) and multi-car bank (Units 80,81,82) shall be performed outside of Primary Terminal Operating Hours.

3. Loading Docks A, B and C elevators (Units 1,99,58) shall be performed after 2:30PM.

4. All other units shall be inspected between the hours of 6:00AM and 3:00PM.

05 24 HOUR CALLBACK

A. The Contractor shall provide a 24x7x365 dispatch desk with a single point of contact for all 24-hour call back requests for service. A person, not voice mail shall answer calls placed to the dispatch desk.
Dispatch desk personnel shall be responsible to log and forward basic information about calls including party calling, caller’s contact information, accurate technical description of the problem or request, extent of the outage if a portion of the system is down, equipment and location involved, and any other relevant technical portions of the activity log entry for the call.

B. The Contractor shall respond to all requests for service and corrective action 24 hours a day, 365 days of the year. The Contractor may at a minimum initially dispatch one journeyman level mechanic to respond to the call for service. However, if the Contractor determines additional mechanics are required to complete the repairs and return the unit to service, the Contractor shall dispatch the additional mechanics at no cost to the Authority. No repair shall be postponed or any unit placed out of service due to lack of Contractor resources.

06 ELEVATOR ENTRAPMENTS

A. The Contractor shall immediately respond to all reported elevator entrapments and shall assist in the removal of the persons from the unit.

B. The Contractor shall not return any unit to service following an entrapment until the Contractor has thoroughly inspected the unit and determined the cause. The inspection shall include at a minimum checking for controller fault codes and inspecting all door locks, door contacts, door tracks, leveling devices, car operating and hall operating stations.

C. The Contractor shall document all entrapments as described in Section IX Documentation and Reporting.

07 EXCLUDED SERVICES

All items, fixtures, lights, receptacles, switches, finishes, components, systems and subsystems (including pit sump pumps and associated controls) of elevators, escalators and moving walks including monitoring systems, erected hoistway construction and machine rooms/enclosures are covered by this contract with the following exclusions:

a. Inspection, testing, maintenance, repair and replacement of fire detection and alarm systems including automatic fire sprinkler heads/guards, smoke/thermal fire detectors, and local and remote annunciation systems.

b. Routine custodial cleaning of elevator cab interiors.

c. Repair and/or replacement of primary electrical power service up to and including equipment disconnect switches.

d. Repair and/or replacement of heating, ventilating and air conditioning systems or equipment which serves machine rooms/spaces, pits, well ways and hoistways.

e. Communication systems and signaling components (cabling) external other than those in the equipment and machine room (i.e. telecommunication wires, security card readers).

f. Elevator cab finish floors (i.e., carpet, vinyl)

g. Fire extinguishers.

08 PERFORMANCE INCENTIVES/PENALTIES

A. In the event of non-performance of work by the Contractor, the Authority’s Contracting Officer will have the right to exercise one of the following options within ten (10) calendar days after the event of non-performance:
1. The Contractor shall correct such non-performance upon notification by the Contracting Officer and the Authority shall make no deductions for non-performance.

2. The Contractor shall reduce the monthly invoice when notified by the Contracting Officer of penalty action. When applicable, deductions shall be made in accordance with the following paragraphs:

   a. EEMWS unit found not to be in compliance with ASME A17.1 during Annual Safety Code Inspection - $100 per reinspection.

   b. EEMWS unit found not to be in compliance with ASME A17.1, Rule 1206.4 pertaining to safety devices - $1000 per device.

   c. Failure to respond to trouble calls and 24-hour callback requests in accordance with the response time limits stated in Section VII General Requirements (01) Response Times - $500 per occurrence.

   d. Failure to document and provide unit hour meter readings in accordance with the contract requirements as stated in Section IX- Documentation and Reporting, 08 Monthly Unit Availability Report - $500 per occurrence.

B. In the event of outstanding performance of work by the Contractor, the Authority’s Contracting Officer will have the right to exercise one of the following incentives when applicable in accordance with the following paragraphs:

   1. No elevator entrapments occur within a calendar month – Bonus of $1,000 (entrapments caused by vandalism or abuse shall not be counted when determining whether the contractor has earned this incentive).

   2. All EEMWS are found to be in compliance with ASME A17.1 code during Annual Safety Code Inspections – Bonus of $2,500.
SECTION V - SUPPLEMENTAL SERVICES

01 DESCRIPTION OF SERVICES

A. The Authority may, during the course of this contract, request that the Contractor perform Supplemental Services which are outside the requirements of the Base Services Section of this contract, i.e., additions to equipment, repair of validated vandalism/abuse, rehabilitation, refinishing, escort services, electrical and fire detection systems outages or repair work to bring equipment up to standards with the provisions of current applicable codes or laws e.g. Americans with Disabilities Act (ADA). The Contractor may be required to alter, improve and/or overhaul equipment, which when completed will modify and/or enhance the aesthetics, operation, performance, reliability, safety etc. of the units beyond existing levels.

B. The Contractor shall provide all supervision, labor, administrative support, materials, tools, parts, supplies, equipment, and transportation necessary to perform these services. Such work shall be compensated at the rates listed in the contract price schedule.

C. The Contractor shall not utilize on-site employees assigned to perform Base Services to accomplish Supplemental Services during Contractor duty hours. Supplemental Services shall be carried out in addition to Base Service tasks and responsibilities and there shall be no delay or other impact on the performance of Base Service tasks and responsibilities because this work.

D. The Authority shall incur no obligation for out of scope work that is not authorized in advance, by a Call Order.

02 CONTRACT SERVICES CALL ORDER

A. All Supplemental Services shall be requested and approved in advance by the COTR using the “Contract Services Call Order” form shown in Appendix C. The Call Order will contain a detailed description of the services that are required from the Contractor. The Contractor shall provide the COTR a detailed cost estimate including an itemized breakdown for all labor, parts and materials and shipping as well as a schedule with critical milestones for completing the work to be listed on the Call Order.

B. Labor rates included on the contract price schedule for the contract will be used in preparing these estimates. Both the cost breakdown and schedule shall be made part of the Call Order. The Contractor shall not proceed with any work described in such Call Orders until authorized in advance and in writing by the COTR.

03 VANDALISM/ABUSE REPAIRS

A. As a part of Base Services the Contractor shall respond to all calls for suspected vandalism/abuse that involve the equipment covered by this contract. If the Contractor finds suspected vandalism/abuse damage to the equipment the Contractor shall secure the equipment, contact the Police and wait at the equipment until the Police respond. The Contractor shall document the incident as described in Section IX Documentation and Reporting.

B. The repair of validated instances of vandalism and/or abuse will be reimbursed by the procedures described in Section XIV Method of Payment.

C. The Contractor shall proceed with corrective action in all cases of suspected vandalism/abuse if in the Contractor’s opinion the work will not exceed 2 hours in duration. If the work is anticipated to exceed 2
hours to complete, the Contractor shall remove the unit from service, properly barricade it, and immediately notify the COTR or in his absence, the Work Order Desk. The Contractor shall then prepare a scope of work for the repairs including a cost estimate and provide to the COTR for approval. The COTR will provide an approved Call Order or give verbal instructions to proceed with the work as described in Supplemental Services.

D. The following work items shall not be considered vandalism/abuse under the terms of this contract and shall be included as part of Base Services:

- Broken and or worn comb plates
- Damaged and/or chipped escalator demarcation strips (K-edges)
- Activated safeties
- Running on arrival
- Activated fireman’s recall
- Damaged elevator door gibbs
- Worn/broken/missing elevator door astragals
- Damaged elevator door locks
- Requests for unit shut downs or restarts
- Worn/broken/missing car operating panel buttons, labels, numbers, plaques
- Removal of foreign objects (i.e. keys, identification badges etc.) from equipment pits
SECTION VI - CONTRACT START UP

01 CERTIFICATIONS

The Contractor shall provide proof that personnel performing work under this contract have valid state or local license or certification for EEMWS covered under this contract. Persons performing maintenance shall have participated in a Certification Program within the last 12 months and be certified through the National Elevator Industry Education Program (NEIEP).

02 KEY CONTRACTOR PERSONNEL

The Contractor shall identify and provide the Contracting Officer and COTR with a list of names and telephone numbers of the key personnel who shall be responsible for fulfilling all the requirements of this SOW including responding to emergency callbacks. Contractor’s key personnel list shall be provided to the Contracting Officer and COTR fifteen (15) days prior to the start of the contract and shall be updated when approved changes are made.

03 SECURITY REQUIREMENTS

The Contractor shall ensure all staff while on the job site visibly display at all times a valid Authority security badge. The Contractor shall provide the COTR with a list of employees who will be applying for security badges fifteen (15) days prior to the start date of the contract. All Contractor employees working at the jobsite shall obtain a security badge no later than thirty (30) days from the award of the contract.

04 PREINSPECTION OF EQUIPMENT

A. The Contractor shall within thirty (30) days from the contract award, perform a equipment condition survey and assess all equipment covered under this SOW (Appendix B) to establish a condition baseline. The equipment condition survey shall include observations of deficiencies in equipment condition, operation and/or performance and shall provide a documented baseline report of deficiencies and serve as a “starting point” for contractor to provide ongoing maintenance. The Contractor shall be responsible for providing any additional resources necessary to complete this task as part of the base services portion of the contract.

B. The equipment condition survey report shall identify and validate all deficiencies that the Contractor claims exist, together with a detailed breakdown of the estimated cost to repair each deficiency and a recommended priority to correct each. A draft copy of the equipment condition survey report shall be submitted to the COTR within five (5) business days of the inspection completion date and final report to be submitted to the COTR within five (5) business days from the draft report approval date. The Authority will determine how and when each item will be addressed. Correction of these deficiencies will be accomplished by either supplemental services under this SOW or by competitive procurement as determined by the Authority. Any deficiencies found after the equipment condition survey report has been submitted will be considered the Contractor’s responsibility and will be covered under base services or supplemental services depending on the circumstances.
SECTION VII - GENERAL REQUIREMENTS

01 RESPONSE TIME

Contractor response time to requests for service that occur during Contractor duty hours shall not exceed fifteen (15) minutes. Contractor response time to 24-hour callback service requests shall be one (1) hour from receipt of request until arrival at the unit during primary terminal operating hours and two (2) hours if received outside of primary terminal operating hours. Arrival at the unit is determined by the time recorded when the unit bar code label is swiped by the bar code scanner. The contractor shall enter the date and time request for service was received in the bar code scanner. The primary terminal operating hours are 6:00 AM through 11:00 PM EST/DST, daily 365 days a year (includes weekend and holidays).

02 CHECK-IN/CHECK-OUT REQUIREMENTS

A. Contractor employees shall at all times, immediately upon arriving to the job site; check-in with the Authority’s Work Order Desk and immediately prior to their departure from the job site shall check-out with the Authority’s Work Order Desk.

B. During afterhours callbacks; the Contractor employees shall check-in and inform the Work Order Desk as to the purpose of the visit, during check-out the contractor shall apprise the Work Order Desk of the operational status of the unit(s) of which they responded to and any safety code(s) that were set (i.e. 12-skirt switch, 10 top comb plate) or specific actions taken to accomplish repairs.

03 OUTAGES AND REPAIRS

A. It is the Authority’s intent that no unit of the EEMWS shall remain out of service for a period greater than 72 hours. If the Contractor determines a unit must remain out of service for a period greater than 72 hours the Contractor shall immediately notify the COTR (e-mail) and submit an extended outage report to the COTR. The report shall contain a detailed explanation and justification why the unit must remain out of service and the contractor’s plan of action schedule to return the unit to service. In no case shall any EEMWS unit remain out of service due to lack of Contractor resources.

B. The Contractor shall not allow any EEMWS to remain out of service for preventive maintenance services during Contractor duty hours without the presence of technicians performing work.

C. The Contractor shall provide a “Weekly Outage Schedule Report” to the COTR via e-mail identifying all planned outages for the following week to include all scheduled maintenance, repairs and/or inspections. The report shall include the reason for the outage and the estimated duration of the outage.

D. The Contractor shall remove from service immediately any piece of equipment covered by this contract that is in violation of the ASME A17 Safety Code or that poses a life safety danger to users. The Contractor shall notify the COTR immediately (e-mail).

E. The Contractor shall barricade the entrance and exit ends of all escalators and moving walks that are out of service and/or not intended for use. Barricades shall be sufficient to prevent use of the equipment. The contractor shall place a sign directing the public to the nearest escalators or moving walks.

F. The Contractor shall barricade and place out of service signage at each floor of all elevators that are out of service and/or not intended for use. Barricades shall be sufficient to prevent use of the equipment. The Contractor shall place a sign directing the public to the nearest elevators.
G. The Contractor shall maintain on site for the term of the contract a sufficient quantity of barricades and out of service signs to ensure all units placed out of service will be properly barricaded and identified to prohibit unauthorized entry or use. All barricades and out of service signs shall be maintained in a clean undamaged condition. Damaged, worn, dirty or stained barricades and out of service signs shall be replaced with new at no cost to the Authority. Barricades shall be stored out of public view at all times when not in use.

H. When deficiencies are identified, the Contractor shall immediately proceed to repair and/or correct the deficiencies. The Contractor shall not postpone any repair due to lack of Contractor on site resources. If a piece of equipment is required to be removed from service for any reason other than a safety code deficiency, the Contractor shall coordinate the removal of the equipment from operation in advance in writing (email) with the COTR.

I. In the event of multiple unit failures or outages the Contractor shall provide all supervision, labor, administrative support, materials, tools, parts, supplies, equipment, and transportation necessary to enable the Contractor to perform repairs on all out of service units simultaneously. The Contractor shall not postpone or delay any repair due to lack of Contractor on site resources.

J. In the event of a moving walk or escalator crash consisting of 3 or more pallets or steps the Contractor shall immediately follow lockout/ tag out procedures, barricade the unit and inform the COTR (email and photos). The Contractor shall not tamper with, begin disassembling or proceed with repairs until the Authority’s Elevator Consultant Contractor has inspected the unit and written notice to proceed has been received from the COTR. Cost reimbursement for the repairs will be accomplished through Supplemental Services or Vandalism/abuse Services as described in Section XIV Method of Payment, however; if it is determined the crash was a result of the worn or misadjusted components, contractor’s negligence or workmanship the Contractor shall be responsible for the cost of the repair.

K. The Contractor shall not at any time remove from service adjacent units unless both units have safety code deficiencies or pose a safety hazard to users.

L. During escalator outages/repairs the adjacent escalator shall be run in a direction that ensures pedestrian flow.

M. During the performance of maintenance and repairs all moving walk pallet attaching bolts and clips shall be replaced with new anytime they are loosened or removed.

04 UNIT 43 ATCT TRACTION ELEVATOR

All scheduled repairs shall be performed between the hours of 11:30 PM and 4:00 AM as part of Base Services. Any changes to this schedule shall be pre-approved in writing by the COTR.

A. In the event a service call or call back is received pertaining to ATCT elevator Unit 43, the Contractor shall consider this a priority over all other work being performed or responded to. The Contractor shall safely stop all other work being performed and respond to these calls.

B. If the Contractor’s first responders are unable to diagnose the problem within 1 hour of receipt of the call for service the Contractor shall dispatch a qualified elevator adjuster to diagnose and repair the elevator.
C. The Contractor shall continuously troubleshoot, diagnose, and repair this unit until it is returned to service. Prior to returning the unit to service the Contractor shall operate and monitor the unit using the car and hall station control buttons until satisfied that the unit will remain in service.

D. Upon completion of the service call the Contractor shall download the barcode reader and e-mail a "Unit 43 Unscheduled Repair Report" to the COTR, which shall contain a detailed explanation of the service call and corrective action.

E. As part of this report, the Contractor shall also provide a copy of the computer generated diagnostics log for each event.

05 ACCIDENTS/INJURIES

A. The Contractor shall be notified of and respond to all accidents and/or injuries which occur upon or involve the EEMWS. Upon arrival to the piece of equipment on which the accident/injury occurred, the Contractor shall immediately remove the unit from service and properly barricade the unit off. After the unit is secured the Contractor shall contact the COTR and the Work Order Desk, report that the unit is out of service and will remain out of service until the Authority’s Elevator Safety Code Inspection Contractor responds to perform a post incident inspection.

B. The Contractor shall provide post accident/injury inspection support as part of Base Services and shall not return the equipment to service or proceed to make any repairs until after the Authority’s Elevator Safety Code Inspection Contractor has performed a post incident inspection of the unit and approved its return to service.

C. The Contractor shall be responsible for promptly notifying the COTR and Airport Police of any accidents arising from the performance of this contract involving bodily injury to workers, building occupants, visitors, or other persons. The COTR will provide information necessary concerning whom to contact and the specific form of the follow-up written notice.

06 STATUS MEETINGS

The Contractor’s representative(s), including the Project Managers and the on-site mechanics shall attend all meetings as required by the COTR to perform inspections, discuss, coordinate and evaluate the status and performance of services under this contract. These meetings will be held on a weekly basis or as frequently as the COTR deems it necessary.

07 QUALITY CONTROL PROGRAM

The contractor shall implement an effective quality control program. This program shall insure the Contractor fulfills all the requirements of this SOW. This program shall include but not be limited to all elements of the quality control program described in the technical proposal that the contractor submitted in response to the Authority’s solicitation for this contract.

08 COMMUNICATION AND COORDINATION

The Contractor shall maintain an effective communication and coordination policy with the Authority utilizing email, telephones, scanners, faxes, text messaging devices, etc. to ensure the Authority is kept up to date of current equipment status, scheduled and unscheduled outages, entrapments, vandalism etc. for the term of the contract.
09 COMPUTER SOFTWARE UPGRADES

The Contractor shall keep abreast of all available OEM software upgrades for each piece of equipment covered by this contract and those utilized by the Contractor for testing, evaluation and troubleshooting. The Contractor shall notify the COTR of all such available OEM software upgrades and with the COTR’s written approval, the Contractor shall purchase and install approved upgrades.

10 DELIVERY OF SUPPLIES

The Contractor shall schedule its own supply deliveries and the supply deliveries of its vendors and subcontractors to coincide with the loading dock operating hours.

11 FIRE PREVENTION AND PROTECTION

A. Fire prevention and protection at Authority facilities property is essential. The Authority shall provide limited fire prevention equipment within the facilities. The availability of fire protection equipment provided by the Authority shall not limit the Contractor’s responsibility or liability for maintaining a reliable fire prevention and protection program for its employees and the property serviced.

B. The Contractor shall be knowledgeable of and provide adequate and appropriate training for all employees in the proper method of reporting a fire. All pertinent information regarding fire-reporting procedures may be obtained from the COTR.

12 FIXED IMPROVEMENTS AND OPERATING FACILITIES

A. During the period of performance of the contract, title to the fixed improvements made by the Contractor shall remain with the Contractor. “Fixed Improvements” includes any improvements, fixtures, additions, annexations or alterations to the job site or a portion thereof which cannot be removed or changed without material damage to, or destruction of, either itself or the job site or a portion thereof. All fixed improvements on the job site shall require the prior written approval of the Authority.

B. The Contractor shall have no right during the term of this contract to demolish or remove, in whole or in part, any fixed improvements or parts removed from the conveyance equipment on the job site except with the prior written consent of the Authority, which may, at the discretion of the Authority, be conditioned on the obligation of the Contractor to replace the same by a building structure or improvements, shall be left in place and title to them shall transfer to the Authority unless otherwise acquired in writing by both the Contractor and the Authority.

13 LOST AND FOUND PROPERTY

The Contractor shall immediately turn in to the Authority’s Lost and Found Department all property found on the job site. Any violations or disregard of the rules, regulations and/or policies may be cause for immediate termination.

14 SAFETY

A. The Contractor and each of its employees shall comply with all applicable OSHA and Authority rules and practices, including directives issued by the Airport Manager, Airport Operations, MWAA Police and Fire Departments, Federal Aviation Administration, and Authority Divisions while on the job site.
B. The Contractor shall provide and ensure that all personnel at the work site wear the safety devices/apparel described below when in areas designated by the Authority.

- Approved back support and protective devices
- Approved hearing protection
- Approved hand protection
- Other safety devices/apparel when conditions warrant

C. The Contractor shall furnish documentation as directed by the COTR of the completion of the approved safety training of equipment operators and other personnel. The safety training shall comply with all OSHA standards and a sample program shall be submitted to the COTR.

D. The Authority reserves the right to inspect all areas for safety violations at its discretion, direct the Contractor to make immediate improvement of necessary conditions and/or procedures, and/or stop the work if other hazards are deemed to exist.

E. In the event that the Authority should elect to stop work because of any type of existing safety hazards after the Contractor has been notified and provided ample time to correct, the Contractor shall bear all costs for eliminating the hazard(s) and shall not be granted compensation for the work stoppage. The Contractor shall pay all additional expenses.

F. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the contract. The Contractor shall take all necessary precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to persons, properties, equipment and vehicles.

G. Damage caused by the Contractor to any properties shall be repaired or replace to the satisfaction of the Authority at the expense of the Contractor. The Authority, at its sole direction, may elect to repair or replace the damaged property, and deduct such costs from monies due the Contractor.

H. The Contractor shall, within fifteen (15) days of contract award, submit its own detailed safety and protection plan/program that shall comply with all safety, environmental protection, property protection and health provisions of the contract.

I. Prior to use of any products or materials, the Contractor shall provide the following submittals for review and approval by the COTR. The Contractor shall furnish three copies of each submittal.

1. Manufacturer’s product data and literature
2. Manufacturer’s installation recommendations
3. Samples, if required by the COTR
4. Material Safety Data Sheets (MSDS)

15 SECURITY REQUIREMENTS

A. The Contractor shall not permit any employee to have keys for access to locked rooms until it has been determined that permitting such person(s) to have such access shall not be contrary to the Authority’s interest, and that the individual(s) is authorized to be admitted in accordance with applicable security orders, rules, regulations and instructions as determined by Authority.

B. The Contractor shall secure and safeguard all keys, key cards, and any other entry devices and codes provided by the Authority. The Contractor shall maintain a record of the key numbers issued to its employees.
employees. These prohibitions and requirements shall also be applicable to all individuals with regard to access, removal, and/or possession of any information, confidential data, materials, supplies, or equipment. The Contractor shall not duplicate and shall not allow any such issued items to be duplicated or removed from the job site. All keys and other entry devices used by the Contractor's employees in the performance of the work shall be returned to the Authority when the contract expires.

C. The Contractor shall safeguard all the identification cards, issued its employees and subcontractors by the Authority to fulfill the requirements of this SOW. The contractor shall ensure these cards are visibly displayed by the respective individual at all times while employed on site at the Airport to fulfill this requirement.

D. The Contractor shall immediately report to the Authority all keys issued to it by the Authority that are lost or stolen. The Contractor shall be responsible for all loss, damages and expenses that the Authority incurs as a result of the Contractor’s loss of Authority keys. These costs include the expense of changing all locks to which the lost keys provided access. The cost of changing locks or keys to the building rooms or areas accessible by the lost or stolen keys will be deducted from the Contractor’s invoice to the Authority for the services performed under the contract.

E. The Contractor shall ensure that, under no circumstances any of its employees shall enter an area not authorized for access by the Contractor.

F. The Authority will not issue keys for sensitive security areas. Instead, the Authority will require the Contractor’s employees to be accompanied at all times in this area by either Authority employees or the Contractor’s own employees who have authorized access to the area.

G. The Contractor, its subcontractors, and all its employees shall be subject to, and shall at all times, conform with any and all rules, regulations, policies, and procedure pertaining to security at the Airport. Any violations of the rules, regulations, policies, and procedures may be cause for immediate removal from the job site.

H. The Contractor shall be responsible for, at its own expense, obtaining the proper security clearance, fingerprinting, training, badges required to access the restricted areas of the Airport including the Air Operations Area (AOA), Security Identification Display Area (SIDA). Identification badges issued by the Authority must be visibly worn at all times while in the SIDA.

I. The Contractor shall be responsible for, at its own expense, compliance with the requirements and procedures to obtain approval of any motor vehicle to operate in the Air Operations Area (AOA).

J. The Contractor shall not leave any tools, parts and/or supplies unattended in the public area at anytime while performing work at the Airport.
SECTION VIII - REGULATORY REQUIREMENTS

01 PERMITS AND RESPONSIBILITIES

A. The Contractor shall, without additional expense to the Authority, be responsible for obtaining and renewing all necessary licenses and permits. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor’s negligence and shall take proper safety and health precautions to protect the work, the workers, the public and the property of others. In addition, the Contractor shall be responsible for all materials delivered and work performed until completion and acceptance of the entire work.

B. The Contractor shall comply with all applicable revisions, additions, changes and/or upgrades to any Federal, state, and municipal laws, codes, and regulations which are in effect on the date of contract and which affect the performance of the work. The Contractor shall also obtain and pay the costs of any royalties and licenses for any patented or copyrighted items used in the performance of the work.

C. It shall be the responsibility of the Contractor to promptly notify the COTR if an official in charge of compliance with the Occupational Safety and Health Act visits the work site.

02 REGULATION REQUIREMENTS

A. The Contractor, including its on the job site employees and subcontractors, shall comply with all applicable Federal, state, local, Authority and the Airports regulatory, code and procedural requirements. This shall include but not be limited to the Contractor complying with the following Authority requirements:

1. The Authority provided:
   - Construction Safety Manual
   - Orders and Instructions
   - Design Manual

2. The Airport’s:
   - Advisories
   - Orders and Instructions
   - Security, Traffic and Parking Requirements
   - Safety Procedures including Lockout/Tagout, Confined Space Entry, Hazardous Materials, Material Safety Data Sheets etc.

B. The Contractor shall report all incidents and accidents immediately to the Authority in accordance with Federal and State laws and regulations and Authority Orders and Regulations.

03 ASBESTOS CONTAINING MATERIALS/LEAD BASED PAINT

A. Most facilities at the Airport except for current CDP construction were constructed prior to 1981. Therefore, these facilities should be presumed to have both Asbestos Containing Materials (ACM) and paint containing lead in their construction.

B. Prior to undertaking any activities that could disturb these materials the contractor shall obtain prior written approval from the Authority to proceed with such activities.
04 HAZARDOUS/CARCINOGENIC MATERIALS

A. The Contractor, its employees, or subcontractors or their employees shall not bring, produce, use, or store on the job site any hazardous or carcinogenic products without prior written approval by the Authority. All hazardous and/or carcinogenic waste transported or generated on-site at the Airport by the contractor must be properly disposed off the Airport site by the Contractor as required by law and at no cost to the Authority.

B. The Contractor shall provide the Authority with complete, legible copies of all regulatory notices, violations, citations, etc. received by the Contractor that pertain directly or indirectly to the fulfillment of this contract.

05 VOC REQUIREMENT

The Contractor shall use on the job site only chemicals and cleaning products that do not exceed the national Volatile Organic Chemical (VOC) limitations rule(s) published by the U.S. Environmental Protection Agency (EPA).

06 HAZARDOUS WASTE

A. The Contractor shall initiate Hazardous Waste Management training and enforcement programs to ensure employees are aware that the domestic drains, and storm drains shall not be used to dispose of gasoline, paint, thinners, hydraulic fluid, solvents, concentrated cleaning agents and other toxic material.

B. The Contractor is responsible for collecting, accumulating, recycling, and/or off site disposal of its hazardous and toxic waste off the Airport in compliance with Federal, state and local laws governing hazardous waste storage and disposal.

C. The Contractor shall provide the Contracting Officer and the COTR with documentation of hazardous materials or wastes that are accumulated, handled, generated, or disposed of by the Contractor’s operations. The documentation shall demonstrate the adequacy of the handling and disposal operations used by the Contractor and will demonstrate that the Contractor’s activities will not result in contamination of Airport property. The Authority shall provide this documentation upon request during periodic environmental inspections of the Contractor’s premises. The Authority shall be copied on all correspondence with regulatory agencies concerning the Contractor’s compliance with environmental regulations.

D. If the Contractor generates hazardous waste in an amount that makes it subject to state and EPA hazardous waste requirements, the Contractor shall apply for a Hazardous Waste Generator Identification Number. Hazardous waste shall be shipped off the Airport using the Contractor’s Hazardous Waste Generator Identification Number documented on a complete and properly signed Uniform Hazardous Waste Manifest. The Contractor shall be required to submit an Annual Hazardous Waste Report to the State of Virginia Department of Environmental Quality.

E. The Contractor shall be responsible for developing a Resource and Conservation Act Contingent (RCRA) Plan if the amount of hazardous waste generated places it into a category that requires a plan.

F. The Contractor shall be responsible for notification and reporting required under SARA, Title III regulations.
G. The Contractor shall, at start of contract, implement a written Hazardous Waste Spill Contingent Plan listing materials used, spill prevention procedures, containment equipment and procedures to be used in the event of spill, personnel protective equipment requirements, notification procedures, in accordance with the Resource Conservation and Recovery Act (RCRA) and the Occupational Safety and Health Administration (OSHA) regulations.

H. In the event of the spill, the Contractor shall notify the Airport Fire Department at (703) 417-8250. The Contractor shall be responsible for all cleanups, site remediation and disposal costs including hazardous waste response teams that may be required at the site. All procedures shall be in accordance with applicable Federal, state and local environmental and OSHA regulations. The Contractor shall remove all hazardous waste materials from the Airport at the end of each workday. Hazardous materials that are temporary, stored site during Primary working hours shall be placed in containment devices that are capable of containing 110 percent of the volume of the substance in the event of a spill.

I. The Contractor shall initiate a training program for its employees and subcontractors on the proper disposal of hazardous materials such as gasoline, paint thinners, hydraulic fluid, solvents, etc.
SECTION IX - DOCUMENTATION AND REPORTING

01 BARCODE INSPECTION DATABASE/PROGRAM

A. The Contractor shall use for the term of this contract an Authority provided computerized barcode data collection system to document the maintenance, repair and inspection support activity for each piece of equipment covered under this contract. The Authority will retain a management role over the program and may implement corrections and initiate changes to the system.

B. It is the Authority’s intent that all data entered on the barcode data collection system shall remain the sole property of the Authority and all barcode equipment shall be returned to the Authority in good working condition at the completion of the contract.

C. The Contractor shall be responsible for the repair or replacement of any barcode scanners that are worn, broken, damaged or lost at no cost to the Authority.

D. The Contractor shall report all missing, damaged or unreadable bar code labels on the equipment.

E. The Contractor shall comply with the following procedures in the management of the bar code system:

1. The Contractor’s employees shall carry the bar code scanner at all times while on duty on the jobsite.

2. The Contractor shall use the bar code system to document each time a piece of equipment is visited for service (i.e. call back, reset, repair, PM, inspection, re-inspection, etc). The bar code scanner shall be down loaded and the bar code database updated at the end of each shift and prior to leaving the job site after responding to an after-hours and weekend call back for service. There shall be no exceptions to this requirement.

3. When responding to a unit as a result of a request for service the Contractor shall enter the date and time the request for service was received in the bar code scanner.

4. During the performance of preventive maintenance the Contractor shall scan the bar code labels located in or on the related equipment rooms and areas (i.e. machine rooms, pits, hoist ways, top of the cars) when entering and close the entry after the PM tasks are completed.

5. During the performance of preventive maintenance on escalators and moving walks which may span over 3 to 4 days the Contractor shall scan the barcode label at the beginning and the end of each shift.

6. The bar code database includes at a minimum, all elevators, escalators, moving walks, and lifts listed in Appendix B as well as the related machine rooms, pits, overheads and hoist ways. The Contractor may suggest additional areas to be included by submitting suggested areas to the COTR in writing.

02 THE AUTHORITY’S COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEM (CMMS)

A. The Contractor shall use for the term of this contract the Authority provided Computerized Maintenance Management System (CMMS) which will schedule and generate work orders for all maintenance and repair activities performed for each piece of equipment covered under this Contract. The Authority will retain a management role over the system.
B. The CMMS will generate preventive maintenance work orders each month. The Contractor shall be responsible for closing out the work orders by inputting all relevant information data in the CMMS that relates to work performed by the Contractor.

C. The Contractor shall request work orders for all work performed (i.e. service calls, service call backs, safety resets, entrapments, vandalism/abuse and corrective maintenance repairs). Upon completion of work the Contractor shall be responsible for closing out the work order by inputting all relevant information data in the CMMS that relates to work performed by the Contractor. This information data shall include, but not be limited to; unit number, name of mechanic(s), date of service, duration of work performance, specific repairs accomplished, part numbers, labor, date completed and any comments necessary to explain corrective action or work performed.

D. If access to the CMMS program is not available from the Authority, the contractor shall meet this requirement by providing the required information on paper copies of the work orders, which will be provided by the Authority.

03 MACHINE ROOM/SPACE CHECK CHARTS

A. The Contractor shall be required to maintain a machine room "Check Chart" (Appendix E) for each elevator covered by this contract. The check charts shall be affixed to the equipment served and shall be displayed in a heavy gauge clear vinyl plastic protective envelope with metal eyelets and snap closures.

B. Each time a unit is visited by the Contractor the machine room check chart shall be fill out detailing the reason for the visit. Completed forms shall be turn in to the COTR and a new blank form shall be installed.

C. The machine room check charts shall be configured to provide at a minimum the following information:

1. System, equipment, assembly and part identification.
2. Description of work activity (i.e. weekly PM, monthly PM, annual PM, repair, inspection etc.)
3. Description of the problem, diagnostics and repair (i.e. reset controller, replaced belt, replaced control valve ‘O-ring’, added 2 gallons of oil etc.).
4. Time when system/equipment was removed from service and restored to operation.
5. Comment space for recommendations, follow-up activities and other commentary related to maintenance, service, and warranty.
6. Oil usage log
7. Service personnel name, date and signature.

04 ELEVATOR ENTRAPMENT REPORT

A. The Contractor shall be responsible for gathering information as is listed below from the persons trapped in the unit and shall, within 1 hour after the occurrence of the entrapment, e-mail the information to the COTR.

1. Unit number
2. Date and time
3. Names and phone numbers of persons trapped
4. Duration of entrapment
5. Cause of entrapment
6. Corrective action taken to prevent future entrapments
05 VANDALISM/ABUSE REPORT

A. The Contractor shall immediately notify the COTR via email of each occurrence of suspected vandalism/abuse. This notification shall include the unit number, description of the damage and probable cause.

B. The Contractor shall in all instances of suspected vandalism/abuse provide the COTR within three (3) business days time; date stamped digital photographs, a Police Incident Report Number, a Work Order Request Number and an estimated cost break down to complete the repairs.

06 SHIFT SPECIFIC UNIT STATUS NOTIFICATION

A. At the beginning of each shift the Contractor shall notify the Work Order Desk and the COTR via e-mail of all units the Contractor intends to remove from service during the shift and identify all units that remain out of service.

B. At the end of the shift the Contractor shall notify the Work Order Desk and the COTR via e-mail of work which has been completed and identify all units that remain out of service.

07 WEEKLY OUTAGE REPORT

The Contractor shall provide a “Weekly Outage Report” to the COTR via e-mail identifying all work scheduled to be performed the following week to include all scheduled maintenance outages, repairs and/or inspections. The report shall include the reason for the outage and the estimated duration of the outage.

08 MONTHLY UNIT AVAILABILITY REPORT

A. The Contractor shall provide a monthly equipment availability report, in Microsoft Excel format, to the COTR by the 5th of each month. This report shall include the previous month’s equipment availability (i.e., uptime percentage) for each piece of equipment covered under this contract. The contractor shall calculate equipment availability as: 1-(reported month’s hour meter reading - hour meter reading from previous month)(number of days in the month x 24 hours).

B. The Contractor shall record and document all equipment hour meter readings on the 1st day of each month at the beginning of the day shift. The order in which the units will be inspected shall be approved by the COTR.

09 MONTHLY ACTIVITY REPORT

The Contractor shall provide the Authority with an electronic report the first week of each month which shows the previous months equipment activity. At a minimum the report shall show: quantities of call backs/service calls received by the Contractor and corrective action performed, entrapments, problem identification, outage quantities per unit.
SECTION X - PERSONNEL

01 PERSONNEL

The Contractor shall utilize responsible, capable employees in the performance of all services of this contract. The Contractor shall provide all the management, supervision, labor, and administrative support necessary to fulfill the requirements of the contract.

02 PROJECT MANAGER

A. The Contractor shall provide a dedicated full time Project Manager. The Project Manager shall be responsible for the execution of the contract. The Project Manager (or designated alternate, when acting as Project Manager) shall perform only Project Manager duties as outlined in Section X, 02. The Project Manager (or designated alternate, when acting as Project Manager) shall not perform other duties related to the on site performance of this contract.

B. The names of the Project Manager and alternates who shall assume the Project Manager duties when the primary Project Manager is absent shall be designated in writing to the COTR fifteen (15) business days prior to the contract start date.

C. The Project Manager shall be available for calls 24 hours a day, seven (7) days a week. The Project Manager shall meet as promptly as possible with the COTR at the COTR’s request to discuss the performance of the work or other provisions of the contract.

D. The Project Manager shall successfully complete Authority provided computer software program training for entering data into the Bar Code, CMMS databases, create reports, and communicate via e-mail.

E. The Project Manager shall be responsible for supervising the daily activities to ensure that all contract requirements are being satisfied.

03 ON-SITE PERSONNEL

A. All services covered by this contract shall be performed by NEIEP certified journeyman level mechanics. However, an apprentice level mechanic under said journeyman level mechanic’s direct supervision may assist each journeyman level mechanic. In no case shall apprentice level mechanics be allowed to work unsupervised.

B. Due to the type of repair work historically performed under this contract and International Union of Elevator Constructors requirements the Contractor shall provide on site during Contractor duty hours a minimum of one elevator team to accomplish the Base Service requirements of this contract.

C. Journeyman level mechanics performing work under this contract shall possess the following minimum qualifications:

- Seven (7) years experience as a certified journeyman mechanic installing, troubleshooting, maintaining and/or adjusting elevator, escalator and moving walk equipment.
- Five (5) years of the required seven (7) years experience shall be hands-on experience maintaining, troubleshooting and repairing elevators, escalators and moving walks similar to the equipment covered under this contract.
- Apprentice level mechanics shall have two (2) years full-time job experience as an apprentice/helper.
D. The Contractor shall provide the COTR resumes for all personnel (Project Manager, journeymen mechanics and helpers) proposed to perform work on this contract for approval. The resumes shall be provided to the COTR no later than fifteen (15) business days prior to employee’s intended start date.

04 ATTIRE

A. All Contractor employees, including subcontractors of the Contractor shall at all times, while on the job site in an official capacity be attired in a distinctive company uniform, which is acceptable to the Authority.

B. The uniform shall have the Contractor’s name easily identifiable, affixed thereon in a permanent or semi-permanent manner such as a badge or monogram. Any color combination, as appropriate, may be used for the uniforms as long as they are distinct from that used by the Authority.

C. These uniforms must be supplied and maintained by the Contractor at no cost to the Authority. As part of their uniform, the Contractor’s employees shall conspicuously display the following identification:

- Airport Photo Identification Security Badge issued by the Airport Operations Division.
- Photo Identification Badge issued by the employee’s respective employer.

05 CONDUCT

A. The Contractor’s employees at all times while on the job site, whether on or off duty, shall conduct themselves in a professional, orderly and safe manner. Rudeness, fighting, being under the influence of alcohol and/or drugs or bringing and/or consuming alcohol and/or drugs, gambling, soliciting, stealing, and any immoral or otherwise undesirable conduct shall not be permitted on the job site and shall result in immediate and permanent removal from the job site of any employee engaging in such conduct from work.
SECTION XI - DELIVERABLES

The contractor shall submit the following items to the COTR:

FIFTEEN (15) BUSINESS DAYS PRIOR TO CONTRACT START DATE

01 LIST OF PERSONNEL REQUIRING SECURITY BADGING
The Contractor shall provide the COTR with a list of employees who will be applying for security badges fifteen (15) days prior to the start date of the contract.

02 RESUMES OF ALL KEY PERSONNEL
The Contractor shall provide the resumes for all personnel (Project Manager, journeymen mechanics and helpers) proposed to perform work on this contract for approval fifteen (15) days prior to the start date of the contract.

03 TELEPHONE, CELL, FAX NUMBERS, EMAIL ADDRESSES
The Contractor shall identify and provide the Contracting Officer and COTR with a list of names and telephone numbers of the key personnel who shall be responsible for fulfilling all the requirements of this SOW including responding to emergency callbacks.

FIFTEEN (15) BUSINESS DAYS AFTER CONTRACT START DATE

04 QUALITY CONTROL PLAN
The Contractor shall, within fifteen (15) days of contract award, submit a quality control plan that details how the Contractor will insure all requirements of the contract will be fulfilled. The plan shall include but not be limited to all elements of the quality control program described in the technical proposal that the contractor submitted in response to the Authority's solicitation for this contract.

05 SAFETY AND PROTECTION PLAN
The Contractor shall, within fifteen (15) days of contract award, submit its own detailed safety and protection plan that shall comply with all safety, environmental protection, property protection and health provisions of the contract.

06 HAZARDOUS WASTE SPILL CONTINGENT PLAN
The Contractor shall, within fifteen (15) days of contract award, implement a written Hazardous Waste Spill Contingent Plan listing materials used, spill prevention procedures, containment equipment and procedures to be used in the event of spill.

THIRTY (30) BUSINESS DAYS AFTER CONTRACT START DATE

07 EQUIPMENT CONDITION SURVEY REPORT
The Contractor shall, within thirty (30) days from the contract award, perform an equipment condition survey and assess all equipment covered under this SOW (Appendix B) to establish a condition baseline. A draft copy of the equipment condition survey report shall be submitted to the COTR within five (5) business days of the inspection completion date and final report to be submitted to the COTR within five (5) business days from the draft report approval date.

AS REQUIRED

08 RESUMES OF ALL NEW KEY PERSONNEL
Resumes for new key personnel shall be provided to the COTR for review and approval no later than fifteen (15) business days prior to employee’s intended start date.
SECTION XII - CONTRACTOR FURNISHED RESOURCES

01 GENERAL

The Contractor shall furnish all supervision, labor, administrative support, materials, tools, parts, supplies, equipment, and transportation necessary to fulfill all the requirements and satisfactorily perform all services described in this SOW in a safe, orderly, timely, efficient and workmanlike manner. The contractor shall provide any additional resources necessary to fulfill the contract requirements at no additional cost to the Authority.

02 REPLACEMENT PARTS

A. The Contractor shall provide all replacement parts that are required to maintain, repair and/or keep fully operational the EEMWS at the Airport.

B. The Contractor shall maintain on the job site for the term of the contract sufficient quantities of replacement parts required to maintain and repair the equipment covered under this contract i.e. light bulbs, fuses, belts, relays, batteries, circuit boards, central processing boards (CPU), comb plates, pallets, steps, drive chains, bearings door gibbs, door operators, astragals, demarcation strips (K-edges), fasteners etc.

C. The Contractor shall only utilize OEM replacement parts and lubricants obtained from and/or recommended by the manufacturer. Aftermarket parts shall not be used unless approved in advance in writing by the COTR.

03 SAFETY EQUIPMENT

A. The Contractor shall provide all safety equipment/devices, personal protective equipment and clothing as required for its employees.

B. The Contractor shall not use propane-fueled portable equipment in the performance of the work required by this contract.

04 DIAGNOSTIC TOOLS

The Contractor shall provide and utilize on the job site a diagnostic computer with all OEM software available to enable the Contractor to change parameters as well as diagnose/troubleshoot each piece of equipment covered by this contract. The diagnostic computer shall remain on the jobsite at all times for the term of the contract and shall only be used to perform the requirements of this contract.

05 MOVING WALK/ESCALATOR TREAD CLEANING MACHINE

The Contractor shall provide and utilize on the jobsite for the term of the contract a dedicated tread cleaning machine; Treadmaster brush/vacuum type machines or approved equivalent. The tread cleaning machine shall remain on the jobsite for the term of the contract and shall only be used to perform the requirements of this contract. The Contractor shall be responsible for maintaining the tread cleaning machine at no additional cost to the Authority.
06 COMMUNICATION EQUIPMENT

All Contractor employees assigned to the Airport shall have, at all times while on the jobsite, portable communication devices with full service to allow immediate two-way communication between the Contractor and/or the Authority and the employee.

07 OFFICE EQUIPMENT

A. The Contractor shall be responsible for providing at its sole expense all materials, supplies (print cartridges, paper, etc.), furniture, fixed improvements and equipment it may require in the office space.

B. The Contractor shall have capabilities to send and receive scanned/faxed documents at the Contractor’s off site office and shall provide a scanner/fax machine for on-site use for the term of the contract.

C. The Contractor shall maintain internet access, with e-mail capabilities. Provide e-mail addresses for all on-site personnel to the COTR and maintain them in a current status at all times for the term of the contract.

D. The Contractor shall provide and utilize on the job site a digital camera with date and time functions.

08 SERVICE VEHICLE

The Contractor shall provide at a minimum one (1) service vehicle, which is equipped, licensed, insured and AOA inspected. The service vehicle shall be on site anytime the Contractor’s employees are working at the Airport. The service vehicle is required to transport materials and supplies, contractor’s employees and tools to various equipment and storage locations at the Airport.
SECTION XIII - AUTHORITY FURNISHED RESOURCES

01 ON-SITE OFFICE

A. To facilitate fulfilling the requirements of this SOW, the Authority will provide the Contractor office space at the Airport. The Contractor shall use the space provided to locate its office for managing the day-to-day operations to fulfill the requirements of this contract.

B. The Contractor shall keep such area clean and orderly at all times.

C. The Contractor shall keep the on-site office door locked whenever unoccupied.

D. The Contractor shall not allow persons who do not possess a current Airport security badge to remain in the on-site office unescorted.

E. The Contractor shall not store any items not related to the contract in the on-site office.

02 OPERATIONS AND MAINTENANCE MANUALS

To facilitate fulfilling the requirements of this contract, the Authority will allow the Contractor to use the O&M manuals for equipment. The Contractor shall utilize these manuals only for work being performed at the job site. The manuals shall be returned to the Authority at the end of the contract period.

03 ON-SITE OFFICE COMPUTER

A. The Authority will provide the Contractor the use of a computer system and access to Authority’s Local Area Network for the sole purpose of fulfilling the requirements of the contract.

B. The computer systems and related equipment shall remain on the jobsite at all times and shall only be used for the purpose of fulfilling the requirements of this contract. The Authority's IT department to verify compliance of this requirement may monitor Contractors computer usage.

C. The Contractor shall not allow unauthorized users to operate or use the Authority provided computer.

D. The computer, related equipment and data shall remain the property of the Authority at the end of the contract. The Contractor shall be responsible for maintaining the equipment in good working order and the repair or replacement of any equipment that is damaged, lost or stolen.

04 BAR CODE SYSTEM

A. The Authority will provide the Contractor the use of a bar code system (hardware and software) for the purpose of fulfilling the requirements of the contract. All bar coding equipment shall remain on site at all times. The bar code system and data shall remain the property of the Authority at the end of the contract. The Contractor shall be responsible for maintaining the equipment in good working order and the repair or replacement of any equipment that is worn, broken, damaged, lost or stolen.

B. Upgrades, additional equipment, system support or licensing fees related to the bar code system shall be purchased under the Supplemental Services Section of this contract. The Contractor will be reimbursed by the procedures in Section XIV- 03, Method of Payment.

05 ELEVATOR MONITORING COMPUTERS
A. The Authority will provide a dedicated computer on Garage A Unit Numbers 29, 30, 31 and 32 which monitors the elevators performance as well as allows the contractor to perform adjustments to the parameters. The Contractor shall be responsible maintaining this computer and installed software.

B. The Authority will provide a dedicated monitoring computer for ATCT Unit 43 with OEM proprietary software installed which monitors the elevator performance/status. Contractor shall be responsible maintaining this computer and installed software.

06 REPLACEMENT PARTS

The Authority will purchase the replacement parts listed below under Supplemental Services. The Contractor shall install these parts under Base Services at no additional cost to the Authority:

1. Handrails
2. Pallet and step chains
3. Gearboxes
4. Drive and pump motors

07 PARKING

A. The Authority will provide at no cost to the Contractor one (1) parking space for the on-site service vehicle.

B. The Authority will provide unreserved general parking spaces for the Contractors’ on-site employees’ private vehicles. The Authority will charge the Contractor for these parking spaces at the same rate as the Authority charges its tenants and concessionaires for similar parking.

C. Visitor parking spaces will be provided at no charge for the Contractor to attend meetings, conferences and conduct contract related business at the East Building and Authority Corporate Office Building. Visitor passes for this space shall be obtained from the receptionist desk.
SECTION XIV - METHOD OF PAYMENT

The Contractor shall submit one invoice on a monthly basis for services that have been completed to the satisfaction of the COTR. The Contractor’s invoice shall be submitted to Accounts Payable MA-22B no later than the 10th day of the following month. Monthly invoices shall be itemized to provide a breakdown of cost for all contract services according to the following:

01 BASE SERVICES

The Contractor shall invoice the Authority for maintenance and repair services, preventive maintenance services and call back services work which was performed in accordance with the SOW, and shall be paid for actual services performed.

02 INSPECTION SUPPORT SERVICES

The Contractor shall invoice the Authority for the actual number of elevators, escalators, moving walks and/or accessibility lifts at the end of the month in which the inspection support work was completed according to the contract unit price per inspection as specified in Section III - Schedule. The contractor shall not invoice the Authority for inspection support until all units have passed the ASME A17 safety code inspection. In the event a unit requires re-inspection(s) to pass the ASME A17 Safety Code Inspection, the Contractor shall perform this inspection support service at no additional cost to the Authority. In addition, the Contractor shall bear all third party re-inspection costs. The Contractor shall include documentation with the inspection support invoice which shows all units have passed ASME A17 safety code inspections.

03 SUPPLEMENTAL SERVICES

The Contractor shall be reimbursed for the labor and materials required to complete Supplemental Services in accordance with the fully loaded labor rates specified in Section III - Schedule. The Contractor shall be reimbursed for the materials used in the performance of Supplemental Services at invoice plus 10 percent mark up. There shall be no mark up for shipping and handling costs. The Contractor shall not invoice the Authority for any work unless a Call Order signed by the COTR has been received or for any work described in a Call Order until all work described in the Call Order has been completed to the satisfaction of the COTR. The Authority shall incur no obligation for work that is not authorized in advance, with a signed Call Order.

04 VANDALISM/ABUSE SERVICES

The Contractor shall be reimbursed for labor and materials required to complete validated Vandalism/Abuse Services in accordance with the fully loaded labor rates specified in Section III - Schedule. Materials used in the performance of Vandalism/Abuse Services shall be reimbursed at invoice plus 10 percent. There shall be no mark up allowed for shipping and handling costs. The Contractor shall not invoice the Authority for any work unless a Call Order signed by the COTR has been received or for any work described in a Call Order until after all work described in the Call Order has been completed to the satisfaction of the COTR. Invoices for Vandalism/Abuse Services shall include a property damage number (DCAPDXXXXXX) that will be assigned by the COTR and shall be submitted to Risk Management MA-450 for payment. The Authority shall incur no obligation for work that is not authorized in advance, with a signed Call Order.
SECTION XV - OPTIONS

01 OPTION ONE

Expand Contractor on-site duty hours to include 6:00 AM through 10:00 PM Saturday and Sunday including holidays. The Contractor shall provide all resources and perform all Base Service requirements as listed and described in the SOW.

02 OPTION TWO

Incremental cost to perform all annual preventive maintenance tasks in a continuous, 24 hr a day manner until completion of PM for moving walks and escalators.
SECTION XVI - CONTRACT CLOSE OUT

01 AUTHORITY PROVIDED RESOURCES

Upon expiration/termination of the contract, the Contractor shall return to the Authority, in good working order less any reasonable wear and tear, all Authority provided resources, computer and bar code hardware, communication devices, documentation, drawings, etc.

02 SECURITY DEVICES

Upon expiration/termination of the contract or discontinuance of employment of any of Contractor employee working at the Airport, all keys, security badges and all other Authority identification shall be surrendered to the COTR.

03 MAINTENANCE INSPECTION

A. Beginning on or about sixty (60) business days prior to contract expiration/termination, the Authority and/or its technical representative will thoroughly inspect the operating condition of the equipment covered by this contract to audit the level of maintenance, service and work performed.

B. The Contractor shall provide all necessary labor, equipment, materials and technical expertise required to assist the Authority to inspect each system including such activities as removing/replacing panels, covers, steps, pallets, and disassembly of equipment to allow unrestricted access of concealed conditions. The contractor shall thoroughly exercise all systems and demonstrate each feature and function.

C. In the event deficiencies or unsatisfactory maintenance are identified, the Authority will have the right to exercise one of the following options:

1. The Contractor shall correct the deficiencies or perform the maintenance as required by the contract upon notification by the Contracting Officer and the Authority shall make no deductions.

2. The Authority shall allow the deficiencies or unsatisfactory maintenance to remain uncorrected and shall make a deduction from payments to the Contractor.
SECTION XVII - APPENDICES

APPENDIX A - SITE PLANS

APPENDIX B - EQUIPMENT INVENTORY LISTINGS

APPENDIX C - CONTRACT SERVICES CALL ORDER

APPENDIX D - CMMS WORK ORDER

APPENDIX E - MACHINE ROOM CHECK CHARTS

APPENDIX F - PREVENTATIVE MAINTENANCE TASKS AND FREQUENCIES
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SITE PLANS
APPENDIX B

EQUIPMENT INVENTORY LISTINGS
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<th>EQUIPMENT LOCATIONS</th>
<th>MANUFACTURER</th>
<th>TYPE</th>
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APPENDIX C

CONTRACT SERVICES CALL ORDER
**RONALD REAGAN WASHINGTON NATIONAL AIRPORT**

**MAINTENANCE ENGINEERING BRANCH, MA-126**

## CONTRACT SERVICES CALL ORDER

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### APPROVALS / ACCEPTANCE OF TASK

NOTE: By signing this Call Order, the Contractor acknowledges that he/she will only perform the work described herein after this Call Order is approved in writing by the COTR. Furthermore, the cost to the Authority for this work shall not exceed the “Estimated Cost” noted above.

### Call Order #

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### Remarks:

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**Call Order #:**

**Date:**

**Date Issued:**

**Date Completed:**

**Date Invoiced Rev’d:**

**Invoice Amount:**

---

**Prepared:**

**Type of Work:**

**Requested By:**

**Contractor:**

**Contract #:**

**Address:**

**Contractor POC:**

**Office Telephone:**

**Emergency Phone:**

**Contractor Fax:**

---

**MWAA Estimator:**

**Contractor Estimator:**

**QTY/UM:**

---

**Estimated Cost:**

**Notes:**

---

**Location (Name, [Account Code]):**

**Description of Work:**

---

**Approvals / Acceptance of Task:**

**NOTE:** By signing this Call Order, the Contractor acknowledges that he/she will only perform the work described herein after this Call Order is approved in writing by the COTR. Furthermore, the cost to the Authority for this work shall not exceed the “Estimated Cost” noted above.

---

**Prepared:**

**Type of Work:**

**Requested By:**

**Contractor:**

**Contract #:**

**Address:**

**Contractor POC:**

**Office Telephone:**

**Emergency Phone:**

**Contractor Fax:**

---

**MWAA Estimator:**

**Contractor Estimator:**

**QTY/UM:**

---

**Estimated Cost:**

**Notes:**

---

**Location (Name, [Account Code]):**

**Description of Work:**

---

**Approvals / Acceptance of Task:**

**NOTE:** By signing this Call Order, the Contractor acknowledges that he/she will only perform the work described herein after this Call Order is approved in writing by the COTR. Furthermore, the cost to the Authority for this work shall not exceed the “Estimated Cost” noted above.

---

**Prepared:**

**Type of Work:**

**Requested By:**

**Contractor:**

**Contract #:**

**Address:**

**Contractor POC:**

**Office Telephone:**

**Emergency Phone:**

**Contractor Fax:**

---

**MWAA Estimator:**

**Contractor Estimator:**

**QTY/UM:**

---

**Estimated Cost:**

**Notes:**

---

**Location (Name, [Account Code]):**

**Description of Work:**

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**Approvals / Acceptance of Task:**

**NOTE:** By signing this Call Order, the Contractor acknowledges that he/she will only perform the work described herein after this Call Order is approved in writing by the COTR. Furthermore, the cost to the Authority for this work shall not exceed the “Estimated Cost” noted above.
APPENDIX D

CMMS WORK ORDER
Metro Wash. Airports Authority
Corrective Maintenance - Facilities
Work Order
7/9/2003
Page 1

Account: 7600 - 7600 Elevators, Escalators, Moving Walks  Type: CM
Location: 220 - 220 - Terminal B - C  Priority: 3  Date Orig: 07/09/2003
Skill 028 2372 ELEVATOR ESCALATOR, MA126  Sub Status: ISSUE  Status Change Date: 7/9/2003

Req Name: Gene Miller  Date Needed:
Req Phone: 7-6521476546

Req Remarks: Mov. Walks/Esc/Elev.

Asset Data
Asset No:  Desc:  Device Management #: 0.00
Manuf:
Model No:
Serial No:
Other ID:
Room:

Seq: 1  Task No: 89  Desc: Elev/Escal/Mv/Wlk stuck/out of ser.  Skill: 028

Materials

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<th>Description</th>
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Completed By: ____________________  Date: ________  Hours: ________

DATE W/O Complete: ________, 2003

Comments:
APPENDIX E

MACHINE ROOM CHECK CHARTS
# Elevator Machine Room Check Chart

<table>
<thead>
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<th>DATE</th>
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Completed check chart shall be forwarded to MA-126.
APPENDIX F

PREVENTATIVE MAINTENANCE TASKS AND FREQUENCIES
PREVENTATIVE MAINTENANCE TASKS AND FREQUENCIES

SECTION 1     ELECTRIC TRACTION ELEVATORS
SECTION 2     HYDRAULIC ELEVATORS
SECTION 3     ESCALATORS
SECTION 4     MOVING WALKS
1- ELECTRIC TRACTION ELEVATORS

General Instructions:

1. This PM task and frequencies guide is intended as a minimum requirement, the Contractor shall review all manufacturer bulletins and maintenance guidelines in their entirety, if Contractor finds conflicting information between this task and frequency guide and that of the OEM, Contractor shall immediately notify the COTR.
2. At the completion of each task, check off task as being completed.
3. Notify the Authority’s Work Order Desk prior to performing PM work that will remove the unit from service.
4. Use OEM renewal parts catalog for identifying parts for replacement. Use only OEM parts or COTR approved equal.
5. Always place out of service signs on all landings at hall stations when removing the elevator from service.

Safety Precautions:

1. Care should be taken when working on or near energized equipment. There are potentials in energized equipment that can cause death or injury.
2. Any equipment found to be off with lockout tags shall not be returned to service until the installer of lockout tags is notified. Lockout tags and locks for electrical disconnects shall be used when power is to be removed for service of equipment.
3. When using lubricants on equipment, assure that over-spray or dripping does not occur on elevator floors, entrances and all other adjacent areas that may cause slipping or falling accidents.
4. Review, comply with and post all Material Safety Data sheets.
5. The performance of all work is to comply with NEII’s “Elevator Industry Field Employees’ Safety Handbook”.
6. Secure loose clothing, hair and jewelry when working on or near moving equipment. Failure to do so may result in injury or death.
7. Stand clear of all openings and hoist equipment when equipment is moving.
8. Keep all work areas clear of debris and obstructions.

Task and Frequency Guide

W - Weekly
M - Monthly
Q - Quarterly
S/A - Semi-Annual
A – Annual

(W) TASK 1: Ride the elevator in both directions

1. Observe and note the quality of the ride, car stopping and leveling.
   a. The starting of the elevator should be smooth with no noticeable jerking or vibrations.
   b. Acceleration and de-acceleration should be smooth and consistent with no noticeable variances in transition speeds.
   c. Stopping should be smooth and soft at floor stops.
   d. Repair all ride, stopping, acceleration and de-acceleration problems.
   e. Verify that car leveling at each floor stop in both directions. Each floor stop should be within "1/4" to even with the floor sill. When the elevator exceeds "1/4" of an inch at a floor, the unit shall level up or down as required.
2. Investigate any unusual noise or irregular condition and repair.

(M) TASK 2: Door operation

Note: Review manufacturer service guide before servicing.

1. Verify door opening is quiet and smooth with no noticeable jerking or relating problems.
2. Verify doors open fully at each landing.
3. Verify doorsill is clean and remove all foreign materials.
4. Verify door-closing force does not exceed 30 FLB. Stopping the doors with your foot at 1/3 closed position and using a door pressure gauge to measure kinetic force shall test doors. The recommended maximum closing force is 29 FLB. Adjust as required.
5. Verify door opening time. Time should not exceed 3.2 seconds.
6. Verify door closing time. Door closing times shall not be less than 4.2 seconds.
7. Verify door-nudging circuit for a closing speed of ½ of the normal speed.
8. Verify car gates fully close at center and have no door gaps at center or door bucks exceeding 3/8”.
9. Check doors for pre-opening at floor stops. The elevator should be level at a floor before a passenger can enter or exit the elevator.

(M) TASK 3: Door protection equipment

1. Inspect safety edge for damage.
2. Verify safety edge extends and retracts properly with no binding.
3. Observe and retract each door safety edge to see that the door reverses direction when edge is activated.
4. Verify proper operation of the electric photo light rays. Test operation by obstructing the lower and upper beam separately. The door should reverse direction when beam is obstructed. Verify safety edge switches operate properly.
5. Retract hoist-way doors to obtain access to door protection equipment.
6. Check all wiring harnesses to photo light rays for damaged wiring and proper fastening.
7. Check electrical wiring and relating cables for wear and adjustment, adjust as required.
8. Examine equipment for loose or worn parts and tighten all mounting hardware. Remove any rattles and other noise.
9. Verify both receiver and sender units for photo light rays are properly fastened, clean and free of obstructions.
10. Thoroughly clean safety edge and photo light ray senders, receivers and filters. Check alignment and focus of lights. Adjust for proper alignment as required.
11. Test safety edges and photo light rays for proper operation after service.

(M) TASK 4: Cab

1. Test emergency alarm bell on main and auxiliary car panels for proper operation.
2. Verify operation of cab ventilation fan.
3. Verify cab emergency telephone and/or intercom is accessible and is operating properly. Verify with police dispatcher the proper elevator number and also signage inside of cabinet door.
4. Inspect elevator sill and flooring for proper fastening, loose or worn flooring materials or tripping hazard.
5. Inspect elevator cab walls, ceiling and handrail for damage or missing signage.
6. Test emergency stop key switch for proper operation.
7. Test emergency light in cab for proper operation and illumination of 5-foot candles at car panel. Replace battery or contactor as required.
8. Check cab lighting for proper illumination. Relamp and clean light diffusers as required.
9. Inspect car operating panels, buttons and position indicators for damaged devices, missing signage, worn buttons, missing screws or inoperative lamps. Repair/replace as required.
10. Open/remove car operating panels and brush and vacuum dust and dirt from inside panel.
11. Observe elevator dispatching. The elevator shall move in either direction until all cars for that direction have been answered.

(M) TASK 5: Hall Call Station

1. Time car call floor waiting times.
2. Inspect all position indicators, hall stations and hall lanterns for proper fastening, damage, illumination and worn components. Repair as required.

(M) TASK 6: Fire fighters service

1. Verify all cab and egress terminal floor fire fighter instruction signage is installed and legible.
2. Test fire fighters service Phase I
   a. Activate Fire Service Phase I from key switch at egress floor. Elevator should return non-stop to terminal floor and open doors. (Car call buttons are rendered inoperative).
   b. Verify buzzer sounds to alert passengers of activation.
   c. Verify Fire Service light illuminates.
3. Test fire fighters service Phase II:
   a. Activate Fire Service key switch in car operating panel.
   b. Register a call to the next landing and provide constant pressure to door close button. Elevator should move to registered car call landing. Elevator should stop a registered car call (doors do not open).
   c. Provide constant pressure to door open button for car doors to open. Releasing the open button will test peak-a-boo operation of door equipment to assure that doors close when constant pressure is removed from the door open button.
   d. Re-open door and turn Fire Service key switch to "hold" position. This function will not allow the elevator to register another car call while activated.
   e. Return the Fire Service key switch to Phase II operation and register another call. Immediately press the call cancel button and the registered call should be removed.
   f. Return elevator to main terminal floor and allow doors too fully open. Return Fire Service Phase II key switch to off position and remove key. Car shall remain at floor with the doors open and not accept car calls.
   g. Place key in Fire Service Phase I key switch and turn to activate "by-pass" position.
   h. Elevator should return to normal operation and dispatch to other floors.
   i. Return Fire Service key switch to off operation and observe that elevator(s) operates properly on automatic service.
4. Repair all malfunctions to fire fighters service and retest as required.

(M) TASK 7: Controller

1. Observe the operation of equipment while elevator is in normal operation.
2. Check for signs of excessive heat, noise or dirt in panel or on electrical devices and control boards. Inspect capacitors, resistors, transformers and relays for signs of overheating and shorting. Assure that control boards are properly secured.
3. Inspect electrical devices for signs of arcing, shorted and burned components.
4. Inspect operation of line starters for arcing or contact wear.
(M) TASK 8: Pit equipment

1. Place “Out of service” signs at all floors for elevator being serviced.
2. Park the elevator at the floor above the bottom landing and secure key panel to locked position.
3. Remove power from elevator by turning off disconnect and tag out.
4. Install barricades in front of the lower landing hoistway doors.
5. Insert emergency access key in lower landing hoistway door to open.
6. Activate pit light and pit emergency stop switch.
7. Enter pit and prop door open so that it will not fully close.
   Note: For safety precautions the hoistway door should be closed to approximately 2”.
8. Install a support to prevent the elevator from moving down.
10. Check for signs of water, oil and damage to relating equipment. Clean and/or repair as required.
11. Sump pump
   a. Remove sump pump pit grating.
   b. Clean debris from sump pump pit.
   c. Fill sump pump pit with enough water to activate sump pump float and verify pump operates and pumps out pit water.
   d. Inspect piping and connectors for damage or leaks.
   e. Assure sump pump floats are properly positioned.
   f. Return sump pump pit grating in place.
13. Remove support from pit.
14. Activate pit stop switch to automatic operation and turn off light.
15. Close door and remove barricades.
16. Return elevator to normal operation.

(Q) TASK 9: Controller

1. Examine relays for proper air gaps, spring pressures, worn or pitted contacts and defective shunts or coil insulation.
2. Check all moving parts for free movement. Adjust setscrew to set air gaps on relays as required.
3. Shut down equipment and perform the checks as follows:
   a. Verify cabinet and wiring is properly grounded.
   b. Inspect for burnt or frayed electrical wiring, signs of shorting to cabinet or electrical components.
   c. Inspect control boards for signs of overheating or shorts.
   d. Verify all fuses are of proper size.
   e. Tighten all wire connections to line starters.

(Q) TASK 10: Machine

1. Examine drive sheave for loose bolts, leaking seals and lubricate. Check hoist rope with straight edge for improper rope or sheave wear. As unit stops check that no noticeable backlash is evident.
2. Verify gear oil is at machine oil level gauge and fill as required. Remove drive sheave inspection port and check that oil flows on gears as elevator moves.
3. Clean exterior of machine
4. Verify cooling fan operation and clean air vents

(Q) TASK 11: Car Safeties

1. Examine safety shoes for worn, damaged or loose parts.
2. Verify that shoes are not dragging are properly aligned and are disengaged.
3. Examine ropes for proper fastening at connections, worn, frayed or damaged ropes.
4. Examine and clean safety plank or SOS switch for proper operation. Lubricate per manufacture recommendations.

(Q) TASK 12: Car Door Operator

1. Examine door operator for normal operation. Doors should operate smoothly with no hesitation, relating malfunctions or slamming.
2. Make reference of speed, checks and final stop in both directions. This equipment should not require adjustment unless equipment is damaged. Refer to door operator adjustment manual before performing adjustments.
3. Examine all moving hardware for condition and proper fastening. Lubricate all pivot points with general machine oil.
4. Open the control box and clean equipment.
5. Verify that all wire connections are tight and inspect the PC board for evidence of overheating or damaged components.
6. Verify that control cams are tight on shaft. Clean cams and apply a light coat of grease to working surfaces.
7. Examine the two limit switches. There is a switch for both open and closed positions. The switch shall open to remove power from the door operator at each end of door travel.
8. Examine the gate switch. The elevator should not move if the car gate is open 2" or more.
9. Verify operation of door restrictor to ensure that car door cannot be opened more than 2" from the closed position.
10. Inspect door operator belts for fraying, breaks or improper tension. Replace or adjust as required.

Note: Should a door operator appear sluggish assure that it is properly lubricated before performing any electrical adjustments.
11. Check door operator gear case for proper oil level.

(Q) TASK 13: Top of Car

1. Verify proper operation of top of car operating device and stop switch.
2. Verify operation of top of car light.
3. Inspect top of car roller guides for tight and snug fit to guide rails. The rollers should be in contact with rails. Adjust as required.
4. Verify top of car emergency exit is properly fastened from the top of car.
5. Examine and test broken tape switch and other safety switches accessible from top of car.

(Q) TASK 14: Hoistway Doors

1. Inspect condition of all relating cables, tracks, door hangers and rollers.
2. Clean and lubricate all related equipment. Apply a light coat of grease to door hanger rails. Check that all hardware is operable and properly fastened.
3. Clean the tracks in all doorsills.
4. Inspect door gibbs for damage and proper adjustment of fire tabs. Tighten as required and replace any missing mounting screws. Gibbs shall penetrate doorsill by a minimum of 1/4".
5. Inspect and adjust relating cables, upthrust rollers and check door rollers for wear. Up thrust rollers should be adjusted to 1/16" with lower door rail. Tighten all hardware and replace worn rollers as required. Test doors to assure that they move freely and are self-closing. At the lower edge of the door opening pull the doors apart. The open space should not exceed 3/8". If space exceeds 3/8" upthrust rollers are not properly adjusted.
6. Inspect and clean all door interlocks. Remove cover and check for worn or loose hardware. Tighten all electrical connections and examine contacts for wear and proper adjustment. Verify that lock is properly adjusted so that the lock will engage when door is closed with a tight snug fit.

7. Inspect top and bottom car roller guides for proper alignment, loose hardware, and defective rubber bushings. Verify rollers for flat or damaged rubber and noisy bearings. Replace and adjust defective rollers as required.

(S/A) TASK 15: Hall Stations

1. Remove fixture cover at each landing.
2. Brush and vacuum dust and dirt from inside panel.
3. Tighten all wire connections.

(S/A) TASK 16: Controller

1. Inspect controller cabinet fans and filters for proper operation. Vacuum fans and replace filters.
2. Clean interior components of controller.

(S/A) TASK 17: Machine

1. Inspect worm gear for excessive leaking or noticeable misalignment or vibration.
2. Check packing gland and adjust evenly to stop excessive leaking. Empty drip pan.
3. Inspect bearing for noise or vibration on gears and thrust bearings. Use of a stethoscope to listen for abnormal noises is required.
4. Inspect machine for leaking gaskets or drive sheave seals (in board and outboard).

(S/A) TASK 18 Governor-

Note: Remove car from service
1. Clean governor and remove excess grease.
2. Inspect sheave and jaws for damaged or missing parts.
3. Inspect all pivot points for free movement, paint or binding conditions. Lubricate all pivot points with machine oil. Note: Governor rope cannot have oil or grease spillage.
4. Lubricate sheave.
5. Verify governor jaws will manually set by movement of weights. Reset governor and switch.
6. Verify operation of over speed switch by tripping switch. Power should be removed from elevator safety circuit. Clean and adjust switch as required.

(S/A) TASK 19 Car Safeties

1. Clean safeties.

(S/A) TASK 20 Car and Counterweight Buffers

1. Verify buffer pistons are extended to the full position. Inspect for leaks in casing and seals.
2. Inspect buffer stands and mounting hardware for signs of metal fatigue, bent or damaged parts. Verify that all mounting bolts are properly fastened.
3. Inspect buffer safety switches for proper operation by tripping. On activation the power should be removed from the elevator. Clean switches and examine for loose or damaged hardware.
4. Verify that buffers hydraulic fluid is at proper level and fill as required. Note: Loss of fluid indicates that a seal may be leaking or the counterweight has hit the buffer.
(S/A) TASK 21 Other Pit Equipment

1. Governor tail sheave
   a. Verify mounting bolts are proper tightness and inspect for missing or loose parts.
   b. Inspect tail sheave for proper tension and sheave bearing and seals for good condition.
   c. Lubricate sheave.

2. Selector tape or cable sheaves:
   a. Inspect stand and sheave for proper mounting and fastening.
   b. Inspect seals for leaks and bearings for noise. Verify sheave is aligned.
   c. Lubricate sheave and change tape felts if required.

(S/A) TASK 22: Slow Down, Directional and Limit Switches

1. Activate switches at the upper and lower landing to verify proper operation.
2. Activate bottom and top hoistway final limit switches to verify proper operation.
3. Verify switches move freely and return to inactive position.
4. Clean switches at each landing. These switches require no lubrication under normal conditions.

(S/A) TASK 23: Leveling Tapes/Cables

1. Inspect tapes/cable hitches and mounting devices for proper fastening, loose and/or damaged components. Repair as required.
2. Clean and lubricate tapes/cables.
3. Inspect electric or infrared landing system for proper fastening, adjustment to tapes and bulb intensity. Clean all lens of dust and dirt. (See OEM for adjustments).
4. Inspect floor-leveling vanes for proper alignment with sender device. As car moves from floor to floor the sender device will move through each floor leveling vane without rubbing or obstruction. Align vanes as required.

Note: Movement of leveling vanes vertically on the rail will affect leveling at floor stops. Once installed unless damage to the vanes or location of sender device change no adjustments should be required.

(S/A) TASK 24: Main Hoist and Governor Ropes

1. Inspect ropes carefully for broken lays or crowning (worn or flat) spots. Measure diameter of ropes and compare to size on cable tag and tolerances in A17.1 Table 1001.2 (c)(2a) (c). Rust or rouging of ropes must be monitored a closer intervals because deterioration of ropes internally may occur.
2. Any damage to the governor rope or broken rope lays will require replacement. Note: The governor rope is not to be lubricated.
3. Lubricate ropes lightly with a brush or use automatic oiler system.
4. Rope damage or breaks exceeding tolerances in A17.1 Rule 3.29 shall be replaced.

(S/A) TASK 25: Deflector Sheave

1. Inspect deflector sheave for bearing noise, seal leaks or misalignment. Inspect for loose or missing parts. Repair as required.
2. Lubricate sheave.

(S/A) TASK 26: Counterweight and Roller Guides

1. Inspect rope fasteners for proper fastening, damaged or missing parts. Assure cotter keys are in place and in good condition. Replace if required.
2. Inspect counterweight frame and weights for damaged or loose components.
3. Clean rollers and guides. Inspect guide assemblies for loose or missing parts.
4. Operate elevator in both directions observing rollers for misalignment and bearing noise. Repair as required.
5. Inspect upper and lower counterweight rollers for worn, flat or damaged rollers. Rollers should be snug against counterweight rails. Adjust tension springs as required for proper fit.
6. Lubricate rollers that do not have sealed roller bearings.

(A) TASK 27: Controller

1. With power off, tighten all wire connections at all terminal blocks.
2. Verify transformer voltage has a reduction of power to 115 volts AC.
3. Return power to controller.

(A) TASK 28: Equipment Disconnect

1. Turn disconnect off.
2. Open panel and inspect latching device for proper operation.
3. Verify fuses are properly rated.
4. Turn switch to on position.

(A) TASK 29: Machine

1. Tighten all electrical connections on pole pieces.
2. Inspect tach motor relating parts for proper operation and tighten electrical connections.
3. Clean carbon dust and other foreign debris with low-pressure air and wipe down machine.
4. Disassemble, inspect, clean and adjust machine brake.
   a. Bring elevator to lowest landing.
   b. Disassemble brake plunger and inspect for wear, burrs or other cylinder damage that may cause plunger to bind. Clean and lubricate brake pins with machine oil. Note: Brake pins must move freely when brake is set.
   c. Inspect and meg brake coil and check contacts for proper adjustment. Mark upper and lower position of brake adjustment bolts.
   d. Remove one brake shoe at a time and inspect linings for wear or damage. Reinstall and adjust other side of brake. Clean brake drum of lubricants.
   e. Verify brake shoes set evenly from top to toe.
   f. After completion of brake work observe unit running without passengers and ride unit to check brake adjustments and stopping are correctly set.

(A) TASK 32: Car and Counterweight Buffer

1. Clean buffers.
2. Take elevator to top landing and secure at floor level. Measure distance between bottom of counterweight and buffer. Code requires a minimum of 6" clearance. If minimum distance is not maintained remove stingers from counterweight or the main hoist ropes will have to be shortened.
3. Perform slow speed buffer test in presence of inspector. Buffers shall return to fully extended position after compression within 90 seconds. Check fluid levels after test.

(A) TASK 33: Other Pit Equipment

1. Examine governor tail sheave:
   a. Clean tail sheave.
b. Lubricate tail sheave
2. Examine selector tape/cable sheaves:
   a. Clean sheave.

(A) TASK 34: Top of Car Cleaning and Inspection

1. Clean and vacuum all accessible equipment on top of car.

(A) TASK 35: Leveling Tapes/Cables

2. Inspect leveling tapes/cables for wear or damage.

(A) TASK 36: Traveling Cables

1. Examine traveling cables for evidence of wear caused by rubbing on beams or other objects. If this condition is found the cables shall be relocated.
2. Inspect the Kellum grips and mounting devices in hoistway and under car. Cables shall be supported properly with grips to provide free movement as the car moves up and down the hoistway.
3. Any breaks in cable insulation should be repaired using an insulation wrap followed by electrical tape. Proper insulation is required to maintain the pairs of wiring in a cable to prevent shorts.

Note: Should shorting of elevator components occur breaks in traveling cable wiring might be the potential cause.

(A) TASK 37: Main Hoist and Governor Ropes

Note: Review Elevator Inspector's Manual A17.2.1, 329.1 for rope inspection criteria.

1. Inspect tension on ropes for proper tension by using spring tension device to assure ropes are evenly tensioned. Adjust as required.
2. Inspect all mounting bolts and cotter keys for missing parts or improper fastening.
3. Inspect main hoist ropes Babbitt and rope sockets for damage or signs of fatigue.

(A) TASK 38: Deflector Sheave

1. Clean sheave.
2. Lubricate sheave bearing

(A) TASK 39: Annual Survey and Equipment Evaluation

Note: All testing results shall be compared to installed specifications and adjusted to those standards.

1. Test elevator speeds in both directions for plus or minus 5 percent of the Contract rated speed.
2. Verify door open, close, short hold (door open button), door long hold (break in door protection equipment) and door nudging activation times. Record on equipment history log.
3. Verify that door closing force does not exceed 29 FLB.
4. Test and record floor-to-floor times in both up and down direction.
5. Check car slow down and approach speeds in both directions.
6. Verify leveling at all landings in both directions for "even" to plus or minus "1/4" inch.
7. Verify car call times at floors to be not less than 6.0 seconds from door fully open position after answering a call until the doors close.
8. Ride elevator and check quality of ride, speed transitions and stopping. Car shall operate smoothly at all speeds with no noticeable difference on slow down and approach speeds. Stopping shall be smooth and soft without abrupt movement.

(3 Yrs) TASK 40: Machine

1. Change gear oil.
2 - HYDRAULIC ELEVATORS

GENERAL INSTRUCTIONS:

1. This PM task and frequencies guide is intended as a minimum requirement, the Contractor shall review all manufacturer bulletins and maintenance guidelines in their entirety, if Contractor finds conflicting information between this task and frequency guide and that of the OEM, Contractor shall immediately notify the COTR.
2. At the completion of each task, check off task as being completed.
3. Notify the Authority’s Work Order Desk prior to performing PM work that will remove the unit from service.
4. Use OEM renewal parts catalog for identifying parts for replacement. Use only OEM parts or COTR approved equal.
5. Always place out of service signs on all landings at hall stations when removing the elevator from service.

SAFETY PRECAUTIONS:

1. Care should be taken when working on or near energized equipment. There are potentials in energized equipment that can cause death or injury.
2. Any equipment found to be off with lockout tags shall not be returned to service until the installer of lockout tags is notified. Lockout tags and locks for electrical disconnects shall be used when power is to be removed for service of equipment.
3. When using lubricants on equipment, assure that over-spray or dripping does not occur on elevator floors, entrances and all other adjacent areas that may cause slipping or falling accidents.
5. The performance of all work is to comply with NEII’s “Elevator Industry Field Employees Safety Handbook”.
6. Secure loose clothing, hair and jewelry when working on or near moving equipment. Failure to do so may result in injury or death.
7. Stand clear of all openings and hoist equipment when equipment is moving.
8. Keep all work areas clear of debris and obstructions.

Task and Frequency Guide
W- Weekly
M - Monthly
Q - Quarterly
S/A - Semi-Annual
A – Annual

(W) TASK 1: Ride the elevator in both directions

1. Observe and note the quality of the ride, car stopping and leveling.
   a. The starting of the elevator should be smooth with no noticeable jerking or vibrations.
   b. Acceleration and de-acceleration should be smooth and consistent with no noticeable variances in transition speeds.
   c. Stopping should be smooth and soft at floor stops.
   d. Repair all ride, stopping, acceleration and de-acceleration problems.
   e. Verify that car leveling at each floor stop in both directions. Each floor stop should be within “1/4” to even with the floor sill. When the elevator exceeds “1/4” of an inch at a floor, the unit shall level up or down as required.
2. Investigate any unusual noise or irregular condition and repair.

(M) TASK 2: Door operation

Note: Review manufature service guide before servicing.

1. Verify door opening is quiet and smooth with no noticeable jerking or relating problems.
2. Verify doors open fully at each landing.
3. Verify door sill is clean and remove all foreign materials.
4. Verify door-closing force does not exceed 30 FLB. Stopping the doors with your foot at 1/3 closed position and using a door pressure gauge to measure kinetic force shall test doors. The recommended maximum closing force is 29 FLB. If adjustments are required refer to OEM manual.
5. Verify door opening time. Time should not exceed 3.2 seconds.
6. Verify door closing time. Door closing times shall not be less than 4.2 seconds. Note: Door closing times are stamped on the top of door operators.
7. Verify door-nudging circuit for a closing speed of ⅔ of the normal speed.
8. Verify car gates fully close at center and have no door gaps at center or door bucks exceeding 3/8”.
9. Check doors for pre-opening at floor stops. The elevator should be level at a floor before a passenger can enter or exit the elevator.

(M) TASK 3: Door protection equipment

1. Inspect safety edge for damage.
2. Verify safety edge extends and retracts properly with no binding.
3. Observe and retract each door safety edge to see that the door reverses direction when edge is activated.
4. Verify proper operation of the electric photo light rays. Test operation by obstructing the lower and upper beam separately. The door should reverse direction when beam is obstructed. Verify safety edge switches operate properly.
5. Retract hoist-way doors to obtain access to door protection equipment.
6. Check all wiring harnesses to photo light rays for damaged wiring and proper fastening.
7. Check electrical wiring and relating cables for wear and needed adjustment.
8. Examine equipment for loose or worn parts and tighten all mounting hardware. Remove any rattles and other noise.
9. Verify both receiver and sender units for photo light rays are properly fastened, clean and free of obstructions.
10. Thoroughly clean safety edge and photo light ray senders, receivers and filters. Check alignment and focus of lights. Adjust for proper alignment as required.
11. Test safety edges and photo light rays for proper operation after service.

(M) TASK 4: Cab

1. Test emergency alarm bell on main and auxiliary car panels for proper operation.
2. Verify operation of cab ventilation fan.
3. Verify cab emergency telephone and/or intercom is accessible and is operating properly. Verify with police dispatcher the proper elevator number and also signage inside of cabinet door.
4. Inspect elevator sill and flooring for proper fastening, loose or worn flooring materials or tripping hazard.
5. Inspect elevator cab walls, ceiling and handrail for damage or missing signage.
6. Test emergency stop key switch for proper operation.
7. Test emergency light in cab for proper operation and illumination of 5-foot candles at car panel. Replace faulty battery or Contactor as required.
8. Check cab lighting for proper illumination. Relamp as required.
9. Inspect car-operating panels, buttons and position indicators for damaged devices, missing signage, worn buttons, missing screws or inoperative lamps. Repair/replace as required.
10. Remove car panels and brush and vacuum dust and dirt from inside panel.
11. Observe elevator dispatching. The elevator shall move in either direction until all cars for that direction have been answered.

(M) TASK 5: Hall Call Station

1. Time car call floor waiting times.
2. Inspect all position indicators, hall stations and hall lanterns for proper fastening, damage, illumination and worn components. Repair as required.

(M) TASK 6: Fire fighters service

1. Verify all cab and egress terminal floor fire fighter instruction signage is installed and legible.
2. Test fire fighters service Phase I
   a. Activate Fire Service Phase I from key switch at egress floor. Elevator should return non-stop to terminal floor and open doors. (Car call buttons are rendered inoperative).
   b. Verify buzzer sounds to alert passengers of activation.
   c. Verify Fire Service light illuminates.
3. Test fire fighters service Phase II:
   a. Activate Fire Service key switch in car operating panel.
   b. Register a call to the next landing and provide constant pressure to door close button. Elevator should move to registered car call landing. Elevator should stop a registered car call (doors do not open).
   c. Provide constant pressure to door open button for car doors to open. Releasing the open button will test peak-a-boo operation of door equipment to assure that doors close when constant pressure is removed from the door open button.
   d. Re-open door and turn Fire Service key switch to "hold" position. This function will not allow the elevator to register another car call while activated.
   e. Return the Fire Service key switch to Phase II operation and register another call. Immediately press the call cancel button and the registered call should be removed.
   f. Return elevator to main terminal floor and allow doors too fully open. Return Fire Service Phase II key switch to off position and remove key. Car shall remain at floor with the doors open and not accept car calls.
   g. Place key in Fire Service Phase I key switch and turn to activate "by-pass" position.
   h. Elevator should return to normal operation and dispatch to other floors.
   i. Return Fire Service key switch to off operation and observe that elevator(s) operates properly on automatic service.
4. Repair all malfunctions to fire fighters service and retest as required.

(M) TASK 7: Controller

1. Observe the operation of equipment while elevator is in normal operation.
2. Check for signs of excessive heat, noise or dirt in panel or on electrical devices and control boards. Inspect capacitors, resistors, transformers and relays for signs of overheating and shorting. Assure that control boards are properly secured.
3. Inspect electrical devices for signs of arcing, shorted and burned components.
4. Inspect operation of line starters for arcing or contact wear.
(M) TASK 8: Hydraulic Pump Unit

1. Remove covers and observe operation of unit in both up and down directions.
2. During the up operation the pump should operate one second after the elevator has stopped.
3. Inspect for oil leaks or excessive oil in pan. Repair all leaks.
4. Reinstall covers on pump unit.
5. Check oil drip pan and clean oil as needed.

(M) TASK 9: Valve

1. Inspect for leaks.
2. Verify that ports are properly locked down.
3. If leaks are detected refer to valve manufacture guide for AO@ ring replacements.

(M) TASK 10: Reservoir Tank and Oil Level

1. Inspect tank for leaks and proper cover fastening.
2. Inspect hoses for leaks and tighten all clamps.
3. Verify that oil level in reservoir is at index mark. Fill to proper level as needed with recommended fluid.

Note: If oil is required, note on machine room check chart the date and amount added. Excessive loss of oil indicates a leak and must be investigated to determine source of leak. Report all loss of oil on the equipment discrepancy report.

(M) TASK 11: Piping and Victaulic Fittings

1. Inspect all pipe and Victaulic fittings for leaks or ruptures.
2. Verify that all pipes have proper hangers and are fastened.
3. Check oil shut off valve for leaks and proper operation.

(M) TASK 12: Pit Equipment

1. Place “Out of service” signs at all floors for elevator being serviced.
2. Park the elevator at the floor above the bottom landing and secure key panel to locked position.
   Remove power from elevator by turning off disconnect and tag out.
3. Install barricades in front of the lower landing hoistway doors.
4. Insert emergency access key in lower landing hoistway door to open.
5. Activate pit light and pit emergency stop switch.
6. Enter pit and prop door open so that it will not fully close.

Note: For safety precautions the hoistway door should be closed to approximately 2”.

7. Install a support to prevent elevator from moving down.
8. Clean elevator pit.
9. Check for signs of water, oil and damage to relating equipment. Note occurrence on equipment discrepancies log.
10. Sump pump
   a. Remove sump pump pit grating.
   b. Clean debris from sump pump pit.
   c. Fill sump pump pit with enough water to activate sump pump float and verify pump operates and
      pumps out pit water.
   d. Inspect piping and connectors for damage or leaks.
e. Assure sump pump floats are properly positioned.
f. Return sump pump pit grating in place.
11. Inspect piston surface for damage (burrs, scarring) and light coating of oil. Investigate piston damage and correct as required.
12. Check overflow container and pump for proper operation.
14. Remove support from pit.
15. Activate pit stop switch to automatic operation and turn off light.
16. Close door and remove barricades.
17. Return elevator to normal operation.

(Q) TASK 13: Motor Drive Belts

Note: Turn power off at electrical disconnect before checking belt tension.

1. Inspect belts for fraying, excessive wear or breaks. Replacement of belts must be performed by replacing all belts to assure proper operation.
2. Inspect belt tension by checking tension on each belt. All belts shall have approximately the same tension.
3. Assure that belt guard is properly fastened and in place.

(Q) TASK 14: Car Door Operator

1. Inspect door operator for proper operation. Doors should operate smoothly with no hesitation, relating malfunctions or slamming.
2. Make reference of speed, checks and final stop in both directions. This equipment should not require adjustment unless equipment is damaged.
3. Inspect all moving hardware for condition and proper fastening. Lubricate all pivot points with general machine oil.
4. Open the control box and clean equipment.
5. Verify all wire connections are tight and inspect the PC board for evidence of overheating or damaged components.
6. Verify control cams are tight on shaft. Clean cams and apply a light coat of appropriate grease to working surfaces.
7. Inspect limit switches. There is a switch for both open and closed positions. The switch shall open to remove power from the door operator at each end of door travel.
8. Inspect gate switch. The elevator should not move if the car gate is open 2” or more.
9. Inspect operation of door restrictor so that car door cannot be opened more than 2” from the closed position.
10. Inspect door operator belts for fraying, breaks or improper tension. Replace or adjust as needed.

Note: Should a door operator appear sluggish, assure that it is properly lubricated before performing any electrical adjustments. (Refer to OEM for adjustments).

11. Inspect door operator gear case for proper oil level.

(Q) TASK 15: Top of Car

1. Verify operation of TOC operating device and stop switch.
2. Activate top of car light to test.
3. Inspect top of car roller guides for tight and snug fit to guide rails. The rollers should be in contact with rails, however should move. Adjust as required.
4. Verify that top of car emergency exit is properly fastened from the top of car.
5. Examine and test broken tape switch and other safety switches accessible from top of car.
6. Clean and vacuum all accessible equipment. Examine car stiles for cracks or loose hardware and bolts.

(Q) TASK 16: Hoistway Doors

1. Inspect condition of all relating cables, tracks, door hangers and rollers.
2. Clean and lubricate all related equipment. Apply a light coat of grease to door hanger rails. Check that all hardware is operable and properly fastened.
3. Clean the tracks in all doorsill.
4. Inspect door gibbs for damage and proper adjustment of fire tabs. Tighten as required and replace any missing mounting screws. Gibbs shall penetrate doorsill by a minimum of 1/4".
5. Inspect and adjust relating cables, upthrust rollers and check door rollers for wear. Up thrust rollers should be adjusted to 1/16" with lower door rail. Tighten all hardware and replace worn rollers as required. Test doors to assure that they move freely and are self-closing. At the lower edge of the door opening pull the doors apart. The open space should not exceed 3/8". If space exceeds 3/8" upthrust rollers are not properly adjusted.
6. Inspect and clean all door interlocks. Remove cover and check for worn or loose hardware. Tighten all electrical connections and examine contacts for wear and proper adjustment. Verify that lock is properly adjusted so that the lock will engage when door is closed with a tight snug fit.
7. Inspect top and bottom car roller guides for proper alignment, loose hardware, and defective rubber bushings. Inspect rollers for flat or damaged rubber and noisy bearings. Replace and adjust defective rollers as needed.

(Q) TASK 17: Photoelectric Landing System

1. Verify reflector strips are fastened to landing plates and clean.
2. Clean switch lens and reflective strips at each landing.
3. Verify photoelectric switches are fastened properly and clean.
4. These devices are permanently mounted and should not require adjustment unless car is mis-leveling.

(S/A) TASK 18: Controller

1. Examine controller cabinet fans and filters for proper operation. Vacuum fans and replace filters.
2. Clean interior components of controller.

(A) TASK 19: Controller

1. Inspect relays for proper air gaps, spring pressures, worn or pitted contacts and defective shunts or coil insulation. Inspect all moving parts for free movement. Adjust setscrew to set air gaps on relays as required.
2. Shut down equipment and check as follows:
   a. Verify cabinet and wiring properly grounded.
   b. Check for any burnt or frayed electrical wiring, signs of shorting to cabinet or electrical components.
   c. Check control boards for signs of overheating or shorts.
   d. Check all control fuses for proper sizing.
3. With power off, tighten all wire connections at all terminal blocks.
4. Tighten all wire connections to line starters.
5. Verify that transformer voltage for a reduction of power to 115 volts ac.
6. Return power to controller.
(A) TASK 20: Slow Down, Directional and Limit Switches

1. Activate the switches at the upper and lower landing to check operation.
2. Depress bottom and top hoistway final limit switches to test that the car stops.
3. Switches should move freely and return to inactive position.
4. Clean switches at each landing. These switches require no lubrication under normal conditions.
5. Examine controller cabinet fans and filters for proper operation. Vacuum fans and replace filters.

(A) TASK 21: Traveling Cables

1. Inspect traveling cables for evidence of wear due to rubbing on beams or other objects. If this condition is found, the cables will require relocation.
2. Inspect the Kellum grips and mounting devices in hoistway and under car. Cables shall be supported properly with grips to provide free movement as the car moves up and down the hoistway.
3. Breaks in cable insulation should be repaired using an insulation wrap followed by electrical tape. Proper insulation is required to maintain the pairs of wiring in a cable to prevent shorts.
4. Report any cable damage on equipment discrepancies report.

Note: Should shorting of elevator components occur breaks in traveling cable wiring might be the potential cause.

(A) TASK 22: Car Operating Panels and Position Indicators

1. Remove car panels and brush and vacuum dust and dirt from inside panel.
2. Tighten all wire connections.
3. Inspect buttons, switches and lens for damage.
4. After servicing check operation of all buttons and switches.

(A) TASK 23: Hall Stations and Hall Lanterns

1. Remove fixture cover at each landing.
2. Brush and vacuum dust and dirt from inside panel.
3. Examine panel for loose or worn components.
4. Tighten all wire connections.
5. After servicing check operation of buttons.

(A) TASK 24: Annual survey and equipment evaluation

All testing results shall be compared to installed specifications and adjusted to those standards.

1. Verify elevator speeds in both directions for plus or minus 5 percent of the Contract rated speed.
2. Examine door open, close, short hold (door open button), door long hold (break in door protection equipment) and door nudging activation times.
3. Verify that door closing force does not exceed 29 FLB.
4. Check and record floor-to-floor times in both up and down direction.
5. Check car slow down and approach speeds in both directions.
6. Check leveling at all landings in both directions for “even” to plus or minus “3/8” inch.
7. Verify that car call times at floors to be not less than 6.0 seconds from door fully open position after answering a call until the doors close.
8. Ride elevator and check quality of ride, speed transitions and stopping. Car shall operate smoothly at all speeds with no noticeable difference on slow down and approach speeds. Stopping shall be smooth and soft without abrupt movement.
9. Compare all performance tests with as installed standards and adjust elevator to meet those requirements.
3 - ESCALATORS

General Instructions:

1. This PM task and frequencies guide is intended as a minimum requirement, the Contractor shall review all manufacturer bulletins and maintenance guidelines in their entirety, if Contractor finds conflicting information between this task and frequency guide and that of the OEM, Contractor shall immediately notify the COTR.
2. Make a copy of dipswitch settings and miconic AF@ messages.
3. At the completion of each task, check them off as being completed.
4. Notify the Authority’s Work Order Desk prior to performing the PM work that will remove the unit from service.
5. Use OEM renewal parts catalog for identifying parts for replacement. Use only OEM parts or COTR approved equal.

Safety Precautions:

1. Use pendant switch (do not use key switch) to run escalator when steps or floor plates have been removed.
2. Never turn an escalator on or off if there are passengers on the escalator.
3. For all work performed, barricade units at top and bottom. Assure that barricades fully close work areas and do not allow accidental access to escalator by Airport patrons.
4. Care shall be taken when working on, or near, energized equipment. There are potentials in energized equipment that can cause death or injury.
5. Any equipment found to be off with lockout tags will not be returned to service until the installer of lockout tags is notified. Lockout tags and locks for electrical disconnects shall be used when power is to be removed for service.
6. Never use carbon tetrachloride to clean cabinets or equipment.
7. When using lubricants on equipment, assure that all steps, floor plates, comb plates and handrails are free of lubricants, which may cause slipping, or falling accidents.
8. Secure loose clothing, hair and jewelry when working on or near moving equipment. Failure to do so may result in injury or death.
9. Stand clear of all openings and hoist equipment when equipment is moving.
10. Keep all work areas clear of debris and obstructions.
11. The performance of all work is to be in compliance with NEII’s “Elevator Industry Field Employees Safety Handbook”.

Task and Frequency Guide

- **D** - Daily
- **W** - Weekly
- **M** - Monthly
- **Q** - Quarterly
- **S/A** - Semi-Annual
- **A** – Annual
- **BA** –Bi-Annual

(D) TASK 1: Visual Inspection

1. Ride escalator and perform a visual system examination ensuring escalator is operating.
2. Inspect escalator for unusual noises and/or vibrations.
3. Inspect escalator for existence of safety hazards.
4. Inspect escalator for loose or missing decking fasteners, tighten or replace as required.
5. Inspect escalator comb plates for broken bent teeth, replace as required.
6. Inspect escalator steps for chips and/or broken demarcation strips, replace as required.
7. Inspect handrails for damage or cracks that may cause a pinch hazard.

(W) TASK 2: Lubricate Skirt Panels

1. Apply appropriate lubricant to escalator skirt panels.

(M) TASK 3: Skirt panels

1. Inspect skirt panels to verify skirt seams are flush and properly attached.
2. Inspect skirt cover decking to verify rubber edging is in place. Replace as required
3. Inspect skirt panels for damaged, jagged or sharp edges.
4. Inspect skirt cover decking for flush seams, proper alignment and proper fastening. Skirt deck cover must be flush with skirt panel and all fasteners in place.
5. Inspect skirt panels for worn or detached skirt panel brushes.

(M) TASK 4: Floor Plates

1. Inspect entrance and egress floor plates:
   a. Verify plates are firmly fastened and flush with floor and access treads.
   b. Assure plates are free of obstacles and tripping hazards.

(M) TASK 5: Balustrades

1. Inspect balustrade panels:
   a. Inspect balustrades for broken or cracked glass.
   b. Inspect balustrade panels for loose, uneven or improper attachment.
   c. Verify panels and fasteners are smooth and free of burrs and snag points.
   d. Verify interior panels or moldings do not protrude more than 1/4”.

(M) TASK 6: Handrails

NOTE: Mark location of handrail with chalk and check each handrail a complete revolution.

1. Inspect each handrail for cuts, cracks, gouges, excessive wear, etc.
2. Inspect underside of handrails for pinch points.
3. Ride the escalator holding the handrails through the entire travel.
   a. Verify handrails move smoothly without stuttering and that they move at the same speed. A need to change grip more than once during a single trip indicates a need for adjustment.
   b. Firmly grip the handrail at several points during the ride, and verify the handrail does not stall.
   c. Inspect for any unusual noises.

(M) TASK 7: Signage

1. Verify caution and directional signage is in place.
2. Inspect all caution and directional signs at entrance and egress for wear or damage. Replace signs as required.

(M) TASK 8: Lighting

2. Inspect for proper operation of escalator lighting at landing plate.
3. Inspect demarcation lights at entrance and egress.
   a. Verify lights are operating properly.
   b. Verify lights are of a green uniform color and intensity.

(M) TASK 9: Steps

NOTE: Mark a step with chalk and inspect all steps through a complete revolution of the escalator.

1. Inspect steps for proper tracking.
2. Verify step treads mesh with fingers of the combplates and are below that of the upper surface of the treads.
3. Inspect steps for cracks and chips, damaged or broken step demarcation segments or damaged risers. Replace damaged steps and demarcation segments as required.
4. Inspect steps to ensure step edge demarcation paint is not worn. Repaint as needed.
5. Clean all exterior surfaces of steps and risers.
6. Verify that all steps are level with minimum lateral movement.

(M) TASK 10: Emergency stop buttons

1. Activate emergency stop button at both the top and bottom of unit.
   a. Lift cover on stop switch and verify buzzer sounds properly.
   a. Depress stop switch and observe unit stopping.
   b. Verify unit stops within 18" to 32" of travel.

(M) TASK 11: Combplates

NOTE: Inspect combplates at both landings.

1. Inspect combplates for damaged segments, missing teeth and wear of yellow caution paint. Replace combplates when they are damaged, one or more teeth are broken/missing or if yellow caution paint is worn. Comb plates shall match and be uniform in color and design. Mismatched comb plates shall not be installed.
2. Verify treads mesh with combplates with a penetration, which complies with the ASME A17 Code.
3. Verify all hex bolts are properly fastened.
4. Verify combplates sections are flush with other adjacent plates and even in height.
5. Verify proper combplate clearance from landing plate.
6. Verify combplate has appropriate lateral play on each side.
7. Verify combplate teeth have proper alignment with step treads. Verify that combplate teeth have proper indexing with step treads and are of proper penetration.
8. Clean upper and lower combplate guides.

(M) TASK 12: Clean Escalator Pits

1. Vacuum all equipment to remove dust and dirt.
2. Clean all debris from pits.
3. Clean deposits of oil and grease from pits.
4. Remove pendant and check operation of escalator.
5. Install all cover floor plates.
6. Wipe grease or oil from plates.
7. Verify all floor plates are proper installed and flush with combplate treads and floor surfaces.
(Q) TASK 13: Lubrication System

1. Verify gearbox oil level is adequate. Refill only with lubricant specified on nameplate. Do not overfill.
2. Verify pump reservoir is full. Refill only with lubricant specified by OEM.
3. Verify oil brushes are positioned properly. Brushes must touch chain or oil will not be distributed correctly.
4. Verify all lubrication points are receiving oil, or have been lubricated by hand through the oiling brushes.

(Q) TASK 14: Handrail Cleaning

1. Clean handrail guide and roller chains at end of balustrade.
2. Wipe dust from handrail.
3. Wash upper side of handrail with a solution of dishwashing soap and water.
4. Wipe handrail with dry cloth until it shines.

CAUTION: Do not use benzene or benzene solutions to clean handrail. It may affect handrail finish.

(Q) TASK 15: Remove Three (3) Maintenance Steps

1. Remove lower floor plates.
2. Install pendant.
3. Verify pendant stop switch operates properly.
4. Remove three steps as per OEM and stack carefully.

(Q) TASK 16: Handrail Finger Guards and Switches

NOTE: A spring pressure gauge shall be used to measure force for test.

1. Remove covers to expose switches.
2. Examine rubber boots for damage left handrail.
3. Clean with mild soap solution and brush.
4. Tighten all guard screws.
5. Tighten switch-mounting bolts.
6. Verify activation of left handrail switch by pushing cover.
7. If inlet switch does not activate with appropriate pressure adjust tension spring. Switch should activate with 44 lbs. of pressure applied to face.
8. Check and record fault number and verify unit will not operate with left handrail switch activated.
9. Measure gap of switch contact. Adjust as per OEM if required and retest.
10. Repeat step 2 through 9 on right handrail guard.
11. Repeat step 2 through 10 on opposite end of escalator.

(Q) TASK 17: Horizontal Combplate Switches

NOTE: A spring tension gauge shall be used to measure force for test.

1. Remove combplates on both left and right side of unit at bottom landing.
2. Move open steps to lower landing to test horizontal combplate switches.
3. Apply horizontal force to one side of combplate at a time. Verify combplate switches at top and bottom of escalator are triggered by a horizontal pull of 400 lbs.
4. Reset switch after activating.
5. Verify both left and right switches activate when force is applied at top and bottom landings.
6. Clean and lubricate each side of horizontal combplate assembly with a light grade of oil.
7. Make adjustments as required and retest.
8. Replace bottom and top landing combplates.

(Q) TASK 18: Vertical Lift Combplate Switches

NOTE: The vertical combplate switches may be checked at the same time the horizontal combplate switches are checked at each landing. A spring tension gauge shall be used to measure force for test.

1. Move open steps to lower landing to test vertical combplate switches and remove left and right combplates at each landing.
2. Apply vertical pressure to one side of the combplate at a time.
3. Reset switch after activating.
4. Verify vertical lift combplate switches at top and bottom are activated by a vertical pull of 150 lbs.
5. Verify each switch activates when force is applied.
6. Clean all vertical combplate switches and track areas.
7. Make adjustments as required and retest.
8. Replace bottom and top landing combplates.

(Q) TASK 19: Step Clearance

1. Verify the gap between skirting and the side of the steps complies with the ASME-A17 code requirement at each side. The sum of gaps on left and right side shall also comply with the ASME A 17 code requirement.
2. Make adjustments as required.

(Q) TASK 20: Skirt Switches

NOTE: There are four skirt switches, two at upper transition area and two at lower transition on each escalator. Switches should be exercised several times prior to test. The switches are installed approximately 28" from the outer edge of the combplate.

1. Perform the following on each switch:
   a. Verify proper operation of the skirt switches by applying gradual pressure to skirt panel not to exceed 150 lbs. until the skirt switch activates.
   b. Make adjustments as required and retest.

(Q) TASK 21: Sagging Step Monitor

Note: The sagging step monitor is located at each end of the escalator.

1. Verify escalator will not operate when the sagging step monitor switching bar is turned in either direction.
2. Verify safety brake actuates when switch is activated.
3. Adjust as required and retest.
4. Manually lubricate sagging step sensor’s shaft bushing.

(Q) TASK 22: Service Brake and Braking Distance

1. Verify braking distance complies with the ASME A 17 Code Required distance.
2. Adjust braking distance as required and recheck for proper limits.
3. Blow out dust from machine.
4. Lubricate movable brake parts manually.
(Q) TASK 23: Handrail Speed Monitor

1. On left handrail, inspect for proper gap between pulse generator and sensor.
2. Adjust as per OEM.
3. On left side disconnect initiator cable, verify escalator will not operate.
4. Repeat Step 1 and 2 for right handrail.
5. Replace inoperative sensors before returning unit to service.

(Q) TASK 24: Handrail Drive Chain

1. Inspect chain for worn or damaged parts.
2. Verify proper tension on chain, adjust tension as required.
3. Replace chain if the end of the adjustment slot has been reached.

(Q) TASK 25: Missing Step Detector

1. Verify sensor gap from leading or trailing edge of step as per OEM. Adjust as required.
2. Move the open steps to the lower landing and verify unit stops.
3. Manually reset switch at controller.
4. Repeat steps 1-3 at upper landing. NOTE: Unit must be run up to test the detector at the top landing.

(Q) TASK 26: Step Upthrust Switch

1. The step upthrust switch is located on lower right side.
2. Verify proper spring height setting. Check by lifting arm level up and measure gap.
3. Verify micro switch circuit opens when upthrust track moves up.

Note: To perform test, place a small screwdriver in switch to activate. Operate pennant unit should not run. The unit should only be bumped up so that no damage will occur.

(Q) TASK 27: Install Three (3) Maintenance Steps

(Q) TASK 28: Clean Down

1. Thoroughly clean all exposed surfaces of escalator steps and risers.
2. Thoroughly clean escalator skirt panel exposed surfaces.

(S/A) TASK 29: Step Feed

1. Using pendant station, verify steps are centered with comb teeth at top of truss and at bottom of truss.
2. Verify steps run past guide rollers without side impacts at top of truss and at bottom of the truss. If side impacts occur, guide rollers must be adjusted. In addition, skirts may have to be realigned. (If realigned is necessary, see OEM):
   a. Verify the play between steps and guide rollers is as OEM.
   b. Verify upper edge of guide rollers is below upper edge of step teeth.
   c. Verify the combs of one step mesh into grooves of an adjacent step.

(S/A) TASK 30: Handrails at Newel

1. Inspect handrail rollers on lower and upper newel for wear, damage and proper alignment. Tighten all mounting brackets. Replace damaged or worn rollers as required.
2. Operate handrail in “down” direction to inspect lower newel and “up” direction to inspect upper newel.
3. Check pressure on handrail belt for snug fit.
4. Vacuum debris and dust from rollers and assemble.
5. Inspect handrail drive chain for proper adjustment and lubrication from automatic system.
6. Adjust as required.

(S/A) TASK 31: Step Chain Tension

1. Verify proper compression of tensioning spring on right and left sides as per OEM.
2. Record spring height.
3. Verify broken chain contact is mounted correctly.
4. Verify tension carriage is free. It will move axially slightly when escalator is running.
5. Inspect step entry into lower combplate. If steps enter at a slight but consistent angle, one of the chains is slightly longer than other. Adjust as per OEM.
6. Verify activation of each broken chain switch will shut escalator off and set the safety brake.
7. Reset broken chain switch.
8. Verify both left and right step chains on the return side of upper incline are receiving proper lubrication.

(S/A) TASK 32: Service Brake

1. Verify that moving the tooth segment will set the brake contact.
2. Refer to OEM if adjustment is required.

(S/A) TASK 33: Drive Chain

1. Verify drive chain has proper slack as specified by OEM.
2. Adjust, as required
3. Verify proper lubrication is applied.

(S/A) TASK 34: Broken Drive Chain Switch

1. Verify activating lever moves freely.
2. Verify broken chain switch operates.
3. Reset switch.

(S/A) TASK 35: Automatic Lubrication System

NOTE: The automatic lubrication system is factory installed and wired.

1. Feed lines carry oil to brushes at the following locations:
   - Main drive chain
   - Left and right step chain on the return side of upper incline
   - Handrail drive chain
   - Left and right step guides,
   - Tangential (transition) curves

   Note: To minimize/eliminate oil splatter on steps WEECO 84 oil is recommended.

2. The automatic lubrication system consists of an oil pump motor, reservoir, and distribution manifold, located in the upper truss, verify all are operating properly and that reservoir is filled to the proper capacity.
3. Verify the proper amount of oil is being transferred to the above locations.
4. Ensure automatic lubrication system is not applying an excessive amount of oil.

(A) TASK 36: Electrical Disconnect

1. Turn off disconnect.
2. Inspect fuses for proper condition and size.
3. Inspect wiring for breaks in insulation or overheating.
4. Tighten lugs on load site only.
5. Turn disconnect back to on position.

(A) TASK 37: Controller

1. Remove upper floor plates.
2. Visually inspect controller electrical components for signs of arcing or overheating conditions. Inspect wiring for insulation breaks and signs of overheating.
3. Inspect all fuses for proper condition and size.
4. Tighten all wiring at connector terminals.
5. Verify grounding brushes are properly positioned to contact steps. Adjust as required to assure proper contact.
6. Remove dummy plug and insert pendant station on upper controller.
7. Turn main disconnect on.
8. Verify operation of pendant station. Using pendant station, test buttons for both up and down direction.
9. Verify proper operation of stop switch on station.
10. Verify switches are set in proper position.
11. Verify voltages at inlet and outlet of transformer (TS) is within the limits of EWDS.
12. Remove pendant station from upper controller, replace dummy cap.
13. Turn on disconnect and main switch in upper controller.

(A) TASK 38: Step Bushings

1. Check lateral play on five random steps. If lateral play exceeds OEM recommendations, all steps should be checked and bushings replaced as required.

(A) TASK 39: Activation of Safety Brake

1. Verify proper operation of the safety brake as per OEM.
2. Adjust as required and retest.

(A) TASK 40: Transition Curves

1. Inspect steps guiding through left and right lower transitions.
   a. Steps should move with minimum vertical and lateral movement.
   b. Noise during movement through transition should be quiet with no noticeable noise.
2. Move open steps to transition and inspect guides and mounting.
3. Check for automatic lubrication on both left and right transitions.
4. Repeat stems 1-3 on the upper transition curves.
(A) TASK 40: Escalator Steps

NOTE: Perform these checks from lower landings

1. Inspect left and right step rollers for damage and proper movement. Replace damaged or worn rollers. Clean all step roller guide rails.
2. Inspect each steps strut for cracks or signs of stress.
3. Inspect front step axle strut for cracks or signs of stress.
4. Inspect axle, step bushings and step retainers for damage on both sides.
5. Lubricate left and right step bushings.
6. Inspect and lightly lubricate step guide pads.
7. Rotate steps and repeat items 1-6 on all steps to include three maintenance steps.

(A) TASK 42: Clean down

1. Remove ½ of the escalator steps.
2. Thoroughly clean all surfaces of escalator steps and risers. Cleaning of removed steps shall be performed off-site.

1. Thoroughly clean all accessible surfaces of the escalator truss, roller tracks and pan.
2. Thoroughly clean escalator skirt panel exposed surfaces.

(A) TASK 43: Transmission oil

1. Change transmission oil.
4 - MOVING WALKS

General Instructions

1. This PM task and frequencies guide is intended as a minimum requirement, the Contractor shall review all manufacturer bulletins and maintenance guidelines in their entirety; if Contractor finds conflicting information between this task and frequency guide and that of the OEM, Contractor shall immediately notify the COTR.
2. At the completion of each task, check them off as being completed.
3. Use OEM renewal parts catalog to identify parts for replacement. Use only OEM parts or COTR approved equal.
4. Notify the Authority’s Work Order Desk prior to perform PM work that will remove the unit from service.

Safety Precautions

1. Use pendant switch to run moving walk when pallets or floor plates have been removed. “DO NOT USE KEY SWITCHES”
2. Never turn a moving walk on or off if there are passengers on the moving walk.
3. For all work performed, barricade units at top and bottom. Assure that barricades fully close work areas and do not allow accidental access to escalator by airport patrons.
4. Care shall be taken when working on, or near, energized equipment. There are potentials in energized equipment that can cause death or injury.
5. Verify all power cabinets are properly grounded.
6. Any equipment found to be off with lockout tags will not be returned to service until the installer of lockout tags is notified. Lockout tags and locks for electrical disconnects shall be used when power is to be removed for service.
7. Never use carbon tetrachloride to clean cabinets or equipment.
8. When using lubricants on equipment, assure that all pallets, floor plates, comb plates and handrails are free of lubricants that may cause slipping or falling accidents.
9. Secure loose clothing, hair and jewelry when working on or near moving equipment. Failure to do so may result in injury or death.
10. Stand clear of all openings and hoist equipment when equipment is moving.
11. Keep all work areas clear of debris and obstructions.
12. The performance of all work is to be in compliance with NEII’s “Elevator Industry Field Employees Safety Handbook”.

Task and Frequency Guide

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(D) TASK 1: Visual Inspection

1. Ride moving walk and perform a visual system examination ensuring moving walk is operating properly.
2. Inspect moving walk for unusual noises and/or vibrations.
3. Inspect moving walk for existence of safety hazards.
4. Inspect moving walk for loose or missing decking fasteners.
5. Inspect moving walk for loose or missing decking fasteners, tighten or replace as required.
6. Inspect moving walk comb plates for broken bent teeth, replace as required.
7. Inspect moving walk pallets for chipped treads, replace as required.
8. Inspect handrails for damage or cracks that may cause a pinch hazard.

(W) TASK 2: Lubricate Skirt Panels

1. Apply appropriate lubricant to moving walk skirt panels.

(M) TASK 3: Skirt panels

1. Inspect skirt panels to ensure skirt seams are flush and properly attached.
2. Inspect skirt panels for damaged, jagged or sharp edges.
3. Inspect skirt cover decking for flush seams, proper alignment and proper fastening. Skirt deck cover must be flush with skirt panel.
4. Inspect skirt panels with unit off and measure horizontal gap between pallet and skirt. Gap shall not be greater than 1/10". Make adjustments as required.

(M) TASK 4: Floor Plates

1. Inspect entrance and egress floor plates:
   a. Verify plates are firmly fastened and flush with floor and access treads.
   b. Assure plates are free of obstacles and tripping hazards.

(M) TASK 5: Balustrades

1. Inspect balustrade panels:
   a. Inspect balustrades for broken or cracked glass.
   b. Inspect balustrade panels for loose, uneven or improper attachment.
   c. Verify panels and fasteners are smooth and free of burrs and snag points.
   d. Verify interior panels or moldings do not protrude more than ¼".
   e. Inspect mounting supports at 4’ intervals to verify track blocks and balustrade support frames are properly attached.

(M) TASK 6: Handrails

NOTE: Mark location of handrail with chalk and check each handrail a complete revolution.

1. Inspect each handrail for cuts, cracks, gouges, excessive wear, etc.
2. Inspect underside of handrails for pinch points.
3. Ride the moving walk holding the handrails through the entire travel.
   a. Verify handrails move smoothly without stuttering and that they move at the same speed. A need to change grip more than once during a single trip indicates a need for adjustment.
   b. Firmly grip the handrail at several points during the ride, and verify the handrail does not stall.
   c. Inspect handrail guides to assure they are properly fastened.
   d. Inspect for any unusual noises.

(M) TASK 7: Signage

1. Verify caution signage is in place.
2. Inspect caution signs at entrance and egress for wear or damage. Replace signs as required.
(M) TASK 8: Lighting

1. Inspect for proper operation of moving walk lighting at landing plate.
2. Inspect demarcation lights at entrance and egress.
   a. Verify lights are operating properly.
   b. Verify lights are of a green uniform color and intensity.

(M) TASK 9: Pallets

NOTE: Mark a pallet with chalk and inspect all pallets through a complete revolution of the moving walk.

1. Inspect pallets for proper tracking at moving walk entrance.
2. Verify pallet vertical cleats mesh with fingers of the combplates and are below the upper surface of the treads.
3. Inspect pallets for damaged or sharp ribs, cracks and chips.
4. Replace all damaged pallets.
5. Clean pallets using tread cleaning machine.

(M) TASK 10: Emergency stop buttons

1. Activate emergency stop button at both ends of the unit.
   a. Lift cover on stop switch and verify buzzer sounds properly.
   b. Depress stop switch and observe unit stopping.
   c. Verify unit stops within 18” to 32” of travel.

(M) TASK 11: Combplates

NOTE: Inspect combplates at both the entrance and egress ends of the unit.

1. Inspect combplates for damaged segments, missing teeth and wear of yellow caution paint. Replace combplate sections when they are damaged, one or more teeth are broken/missing or if yellow caution paint is worn.
2. Verify all bolts are properly fastened.
3. Verify combplate sections are flush with other adjacent plates and even in height.
4. Verify proper combplate clearance from landing plate.
5. Verify combplate has appropriate lateral play on each side.
6. Verify combplate teeth have proper alignment with pallet cleats. Verify that combplate teeth have proper indexing with step treads and are of proper penetration.
7. Inspect combplate guides for proper alignment and fit.
8. Clean upper and lower combplate guides.

(M) TASK 13: Clean Pits

1. Vacuum all equipment to remove dust and dirt.
2. Clean all debris from pits.
3. Clean deposits of oil and grease from pits.
4. Remove pendant and check operation of moving walk.
5. Install all cover floor plates.
6. Wipe grease or oil from plates.
7. Verify all floor plates are proper installed and flush with combplate treads and floor surfaces.
(Q) TASK 12: Remove Six (6) Pallets

1. Remove floor plate.
2. Install pendant.
3. Verify pendant stop switch operates properly.
4. Run moving walk with pendant station until pallet is exposed in lower pit for disassembly.
5. Remove hex bolt and pallet retaining clip on each side of pallet to remove pallet.
6. Repeat step 5 and remove 5 additional pallets.
7. Removal of pallets will allow for inspection and service of unit.

NOTE: All pallet attaching hex bolts and retaining clips which are loosened or removed shall be replaced with new.

(Q) TASK 13: Pallets

NOTE: Perform this inspection from the reversing station end.

1. At the drive side of the moving walk, inspect left and right pallet rollers for damage and proper movement. Replace damaged or worn rollers. Clean step roller guide assembly. Inspect pallet roller assemblies for cracks or evidence of metal fatigue.
2. Inspect pallet outer mounting feet for cracks or evidence of metal fatigue.
3. Verify pallet hex bolts are properly fastened.
4. Rotate pallets and repeat items 1-4 on all pallets to include six removed pallets.

(Q) TASK 14: Lubrication System

1. Verify gearbox oil level is between two marks on dipstick. Refill only with lubricant specified on nameplate. Do not overfill.
2. Verify pump reservoir is full and operational. Refill only with lubricant specified by OEM.
3. Verify oil brushes are positioned properly. Brushes must touch chain or oil will not be distributed correctly.
4. Verify all lubrication points are receiving oil, or have been lubricated by hand through the brush applicators.

(Q) TASK 15: Handrail Cleaning

1. Clean handrail guide and roller chains at end of balustrade.
2. Wipe dust from handrail.
3. Wash upper side of handrail with a solution of dishwashing soap and water.
4. Wipe handrail with dry cloth until it shines.

CAUTION: Do not use benzene or benzene solutions to clean handrail. It may affect handrail finish.

(Q) TASK 16: Handrail Finger Guards and Switches

NOTE: A spring pressure gauge shall be used to measure force for test.

1. Remove covers to expose switches.
2. Examine rubber boots for damage on left handrail.
3. Clean with mild soap solution and brush.
4. Tighten all guard screws.
5. Tighten switch mounting bolts.
6. Verify activation of left handrail switch by pushing cover.
7. If inlet switch does not activate with appropriate pressure, adjust tension spring. Switch should activate with 44 lbs. Of pressure applied to face.
8. Check and record fault number and verify unit will not operate with left handrail switch is activated.
9. Measure gap of switch contact. Adjust as per OEM if required and retest.
10. Repeat Step 2 through 9 on right handrail guard.
11. Repeat Step 2 through 10 on opposite end of moving walk.

(Q) TASK 17: Horizontal Combplate Switches

NOTE: A spring tension gauge shall be used to measure force for test.

1. Remove completes on both left and right side of unit at bottom landing.
2. Move open pallets to entrance landing to test horizontal complete switches.
3. Apply horizontal force to one side of complete at a time. Verify complete switches at entry and egress of moving walk are triggered by a horizontal pull of 400 lbs.
4. Reset switch at controller after activating.
5. Verify both left and right switches activate when force is applied at entrance and egress points.
6. Clean and lubricate each side of horizontal complete assembly with a light grade of oil.
7. Make adjustments as required and retest.
8. Replace entrance and egress landing completes.

(Q) TASK 18: Vertical Lift Combplate Switches

NOTE: The vertical combplate switches may be checked at the same time the horizontal combplate switches are checked at each landing. A spring tension gauge shall be used to measure force for test.

1. Move open pallets to entrance landing to test vertical combplate switches and remove left and right combplates at each landing.
2. Apply vertical pressure to one side of the combplate at a time.
3. Reset switch at controller after activating.
4. Verify vertical lift combplate switches at both ends of the moving walk are activated by a vertical pull of 150 lbs.
5. Verify each switch activates when force is applied.
6. Clean all vertical combplate switches and track areas.
7. Make adjustments as required and retest.
8. Replace entrance and egress landing combplates.

(Q) TASK 19: Pallet Level Monitor

1. Verify moving walk will not operate when the Pallet Level Monitor switching bar is turned in either direction.
2. Verify safety brake actuates when switch is activated.
3. Adjust as required and retest.
4. Manually lubricate pallet level shaft bushing.

(Q) TASK 20: Service Brake and Braking Distance

1. Verify braking distance complies with the ASME A 17 Code Required distance.
2. Adjust braking distance as required and recheck for proper limits.
3. Blow out dust from machine.
4. Lubricate movable brake parts manually.
(Q) TASK 21: Handrail Speed Monitor

1. On left handrail, inspect for proper gap between pulse generator and sensor. Adjust as per OEM.
2. On left side disconnect initiator cable, verify moving walk will not operate.
3. Repeat Step 1 and 2 for right handrail.
4. Replace inoperative sensors before returning unit to service.

(Q) TASK 22: Handrail Drive Chain (Left and right sides)

1. Inspect chain for worn or damaged parts.
2. Verify proper tension on chain, adjust tension as required.
3. Verify handrail drive chain lubrication from automatic system.

(Q) TASK 23: Missing Pallet Detector

1. Verify sensor gap from leading or trailing edge of pallet is as OEM. Adjust as required.
2. Move the open pallet to the entrance landing and verify unit stops.
3. Manually reset switch at controller.
4. Repeat Steps 1-3 at egress landing. NOTE: Unit must be run in opposite direction. (Only the switch in the direction of movement at the moving walk entrance is activated).

(Q) TASK 24: Install Six (6) Maintenance Pallets
NOTE: All pallet attaching hex bolts and retaining clips which are loosened or removed shall be replaced with new.

(Q) TASK 25: Clean Pallets

1. Thoroughly clean all exposed surfaces of moving walk pallets.

(S/A) TASK 26: Pallet Feed

1. Using pendant station, verify pallets are centered with combteeth at entrance of truss and at exit of truss.
2. Verify pallets run past guide rollers without side impacts at front entrance and at rear of walk. If side impacts occur, guide rollers must be adjusted. In addition, skirts may have to be realigned. (If realigned is necessary, see OEM):

(S/A) TASK 27: Handrails

1. Verify each handrail runs centrally into the reversing chain of the balustrade and confirm there is no lateral pressure as it runs onto friction wheel.
2. Verify there is minimum lateral movement on change of direction.
3. Make adjustments as required.
4. Move open pallet to expose the lower handrail support rollers and friction wheel.
5. Inspect handrail rollers on lower and upper newel for wear, damage and proper alignment. Tighten all mounting brackets. Replace damaged or worn rollers as required.
6. Inspect the friction wheels for proper fastening to axle, damage and wear.
7. Inspect the pressure belt for fraying or wear. Make adjustments as required.
8. Inspect the diverter rollers on the opposite side of the friction wheel for wear or damage. Adjust as required.
9. Move the open pallet area to inspect each support roller under the handrail.
10. Inspect each for wear or damage and proper tension. Adjust as required.
11. Inspect support rollers located on the opposite end of the unit at the tensioning station.
12. Vacuum debris and dust from rollers and assemblies.

(S/A) TASK 28: Pallet Chain Tension

1. Inspect chain for damage and worn parts.
2. Verify proper tension.

(S/A) TASK 29: Drive Chain

1. Inspect chain for damage and worn parts
2. Verify proper tension.

(S/A) TASK 30: Pallet Guide Blocks

1. Inspect all pallet guide blocks, replace all worn guide blocks.

(S/A) TASK 31: Slack Chain Switch

1. Verify activating lever moves freely.
2. Verify broken chain switch operates.
3. Reset Switch

(S/A) TASK 32: Automatic Lubrication System

NOTE: The automatic lubrication system is factory installed and wired.

5. Feed lines carry oil to brushes at the following locations:
   - Main drive chain
   - Left and right step chain on the return side of upper incline
   - Handrail drive chain
   - Left and right step guides,
   - Tangential (transition) curves

   Note: To minimize/eliminate oil splatter on steps WEECO 84 oil is recommended.

6. The automatic lubrication system consists of an oil pump motor, reservoir, and distribution manifold, located in the upper truss, verify all are operating properly and that reservoir is filled to the proper capacity.
7. Verify the proper amount of oil is being transferred to the above locations.
8. Ensure automatic lubrication system is not applying an excessive amount of oil.

(A) TASK 33: Electric Disconnect

1. Turn disconnect off.
2. Inspect fuses for proper condition and size.
3. Inspect wiring for breaks in insulation or overheating
4. Tighten lugs on load side only.
5. Turn disconnect back to on position.
(A) TASK 34: Controller

1. Visually inspect controller electrical components for signs of arcing or overheating conditions.
2. Inspect fuses for proper size and condition.
3. Inspect wiring for breaks in insulation or overheating.
4. Tighten all wiring at connector terminals.
5. Check grounding brushes for proper position to contact pallets. Adjust as required to assure proper contact.
6. Verify proper operation of pendant station. Using pendant station, test buttons for both “forward” and “reverse” direction. Check stop switch on station for proper operation.
7. Verify voltages at inlet and outlet of transformer (TS) are within the proper limits.

(A) TASK 35: Safety Brake

1. Verify proper operation as per OEM

(A) TASK 36: Clean Down

1. Remove ½ of the pallets.
2. Thoroughly clean all surfaces of moving walk pallets. Cleaning of removed pallets shall be performed offsite. All pallet attaching hex bolts and clips which are loosened or removed shall be replaced with new.
3. Thoroughly clean moving walk truss, roller tracks, chain and pan.

(A) TASK 37: Transmission Oil

1. Change oil.