

EFFECTIVE DATE: 26 JUNE 2024

Renewal of Aeronautical Ground Lighting at Bonaire International Airport

This supplement serves to illustrate the Renewal of Aeronautical Ground Lighting at Bonaire International Airport

The works to be executed will take place in four phases, from July 1st till November 30th; 2024

- Phase 1: 2 weeks
Inspection of the existing installation. The inspection will consist of performing circuit impedance and insulation resistance measurements, as well as visual inspections.
- Fase 2: 4 weeks
Installation of new cable routes. These include the new conduit pipes and manholes between the runway and the substation, as well as the additional conduit pipes that will be laid along the track.
- Fase 3: 8 weeks
Replacement of the primary cabling, the installation of the grounding network, and the replacement and/or addition of transformer pits.
- Fase 4: 6 weeks
Replacement of all fixtures, transformers, and secondary cabling, as well as connecting the AGL to the new CCRs.

WIP will be conducted during airport closure hours.

In all Phases during the WIP hours the Runway will remain closed for all landings and take-off, with the exception of Emergency flights, SAR Flights or MEDEVAC flights Mon-Sat 0300-1000UTC. At 1030 UTC, Runway will be open for all take-off and landing- Mon-Sun. BIA-OPS and Flamingo TWR will have prompt coordination and communication during the project; For more info contact BIA-OPS at 599 7850477 / 599 7010477

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THE PHASES

Phase 1:

- The following inspections and measurements will be performed: visual inspection, circuit impedance, and insulation resistance measurement. This will map the quality of the current cabling. The aim of the measurements is to identify poor sections so that this can be anticipated in the execution/phasing. For example, prioritizing the replacement of sections of primary or secondary cabling to achieve a more stable and reliable existing installation
- The visual inspections have the following objectives: Check the cable routing of the 'Existing Infrastructure', record the existing installation
- Equipment and personnel: Technician and installation tester
- During the work (during airport closure), the AGL will not be available. However, changes to the installation are limited, and it can be operational within an hour without additional measures.

Phase 2:

- From the fire road to Threshold 10 on the south side, if not already present, a second 110mm conduit pipe will be laid next to the existing conduit pipe. This covers the entire route around Threshold 10, totalling approximately 1900 meters. Between the substation and the runway (end of the fire road), two new 110mm conduit pipes will be laid, including six additional cable pulling manholes. This route is approximately 500 meters long
- Within the 150-meter line of the runway, excavation work is always conducted by two teams. Team 1 consists of a mini-excavator and a ground worker, responsible for opening the trench. Team 2 lays the pipe, grounding conductor, and detection tape, and then backfills the trench. This method minimizes the length of open trench and allows work to be halted quickly, without encountering negative or positive obstacles.
Equipment and personnel: 2 mini-excavators with digging bucket and/or breaker hammer, ground workers.
- Materials required: Conduit pipes, grounding conductors, detection tape.
- During the work (during airport closure), the AGL will not be available. However, changes to the installation are limited, and it can be operational within an hour without additional measures.

Phase 3:

- Step 1 towards achieving the new situation involves installing grounding rods around the runway. Holes will be drilled to a depth of 3.00 meters, after which grounding rods will be installed.
- The next step, which can begin once the first grounding rods are installed, involves phased replacement of the primary cabling and transformer pits
- Every night, during the replacement process, the following actions are carried out:
 1. Disconnect the secondary installation;
 2. Remove the old primary cabling from the conduit;
 3. Remove the old transformer pits;
 4. Clean out the existing conduit pipes (clear/blow them out);
 5. Install new transformer pits;
 6. Install new primary cabling (and grounding conductor for the eastern part);
 7. Bring the installation back into operation (reconnect the secondary system and grounding).
- Equipment and personnel: Cable reel cart, Easy rollers, 2 mini-excavators with digging bucket and/or breaker hammer, Ground workers, Technicians, Cable pulling grips
- Materials: Primary cable, Plugs/connectors, Transformer pits, Pit installation equipment, Cable labels, Conduit pipes, Grounding conductor, Rope, Tape

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- During the work (during airport closure), the AGL will not be available as the installation is being worked on and is disconnected and secured against re-energization. There will be equipment, materials, and personnel along the runway, and there may be both positive and negative obstacles

For the above scenario, additional measures are taken to ensure that operations can be cleared from the runway within an hour. In case work needs to be urgently halted, it is possible that parts of the installation may be missing and cannot be restored or installed according to the planned situation within the hour. For instance, pits may not be installed, primary cables may not be pulled, or plugs may not be mounted. In such situations, pre-assembled primary cables are available at the work location. In emergencies, these cables can be laid above ground from pit to pit or from the start to the end of the work location to reconnect the open loops and restore continuity

Phase 4:

- Replacing all fixtures, transformers, and secondary cabling, as well as connecting the AGL to the new CCRs
- The steps for replacing the secondary side are as follows:
 1. Disconnect CCR (Constant Current Regulator)
 2. Disconnect plugs/connectors
 3. Replace transformer, secondary cable, and fixture
 4. Install plugs/connectors
 5. Reconnect CCR and turn it on
- In total, 247 fixtures/objects will be replaced. The replacement will be carried out per installation section (REH, TXE, REN, THR, or APPROACH). However, during this period, old halogen fixtures and new LED fixtures will be operational simultaneously. Discussions with BIA and NACO will determine what is deemed undesirable in this situation and which NOTAMs need to be issued
- Each PAPI consists of 4 parts. For each part, both the foundation and structure need to be replaced. The new PAPI will be assembled next to the old PAPI, tested, and flight checked. Once the new PAPI is operational, the old one will be decommissioned and removed
- Thresholds/Runway End: for these installation components, significant drilling and sawing work is involved. To minimize damage to the pavement, the decision has been made to position the new fixtures at the old locations. This avoids the need for new holes to be drilled, reducing pavement damage. However, this means that the new threshold cannot be constructed in a parallel manner. Approximately 4 fixtures will be replaced each night. The process includes:
 1. Drilling out the old fixtures
 2. Installing and adjusting new base plates
 3. Cutting new trenches and laying cables
 4. Installing and connecting new fixtures and transformers
- The field signs will be replaced one by one, including their foundations
- In Phase 3, the primary cables for all installation sections have been prepared. Some are already in use but are still powered by the old CCR room (PAPIs, REH, and part of REN28), while others are ready for use (TXE, THR, and APPROACH). In total, 5 loops need to be transferred, and 8 loops need to be put into operation.
- Once an installation section is completed, the next installation section will be processed. The completion of the first installation section affects the AGL control system. From this point on, both the old and new control systems will operate concurrently, requiring two control screens in the tower. Daily updates to the tower will inform operators about which installation section is controlled on which screen. Once all installations are transferred to the new ALCMS (Airfield Lighting Control and Monitoring System), the old system will be phased out, and the new system in the tower will become permanent
- Equipment and personnel: Saw cart, Cable reel cart, Easy rollers, Technicians, Cable pulling grips
- Materials: Secondary cable, Plugs/connectors, Transformers, Cable labels, Conduit pipes, Rope, Tape

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Under the authority of the government of
Curaçao, Aruba, St. Maarten and The Netherlands

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- During the work (during airport closure), the AGL will not be available as the installation is being worked on and is disconnected and secured against re-energization. There will be equipment, materials, and personnel along the runway, and there may be both positive and negative obstacles.
- **Details related to additional works during all phases will be indicated via NOTAM.**

Any questions and/or remarks, please contact the DC-ANSP AIS department Curaçao as soon as possible via above mentioned email address (aipaim@dc-ansp.org).