

NOAO-S Facilities Operations

Status FY2016 Projects

Version: 4.1

Date: December 19, 2016

By: Nicole S. van der Blik, Pilar Viera

Executive Summary

In FY2016 the NOAO-S Facilities Operations Department (Facilities Operations) embarked on an ambitious project to upgrade and improve the existing facilities to provide more reliable services and to allow for certification of critical areas and equipment. These projects are described in Section 4 of the “Budget Fiscal Year 2016, v3.2” which can be found on the NOAO-S Facilities Operations website¹.

In this report we present the status of these projects and the project accounts at the end of the fiscal year 2016. This report is an update of the report on the status of the FY2016 projects of September 9, 2016.

In general, it took more time to scope and bid due to the need for expert definition, which became possible only after hiring two senior engineers in FY2016. As a result, some projects had only just started in the last quarter of FY2016 and are being completed in FY2017, while others have been deferred to FY2017 altogether. Funds collected in FY16 to accomplish these projects will be carried forward to FY17 to complete these projects. It is expected that most of the effort to execute the projects will be in the form of external contracts, so the projects should not adversely affect FY17 plans.

An overview of the project accounts is given in Table 1. A total of 122.1 MCLP will be carried forward in the project accounts. The carry-forward for severance pay, 59.5 MCLP, will be moved to the general overhead account, in which severance pay is budgeted from FY2017 onwards.

¹ <http://www.ctio.noao.edu/noao/content/Reports-and-documentation>

NOAO-S Facilities Operations

1. FY2016 Projects

1.1. Power Line Stability

In the second quarter of FY2016 we installed three automatic circuit re-closers at critical points in the AURA power line system. This improves the stability of the power lines, which connect the facilities on the two mountaintops with the commercial power system. The re-closers are installed (i) at the entrance where the AURA power lines connect to the commercial power grid, currently provided by CONAFE; and (ii) at the bifurcation, where the power line is split to provide power to each of the two summits, one for each summit. These re-closers protect the step down transformers and other electrical equipment on the summits, and allow monitoring performance of the incoming power as well as performance along the power lines. In addition, the re-closers will provide diagnostic tools, allowing for faster recovery of failures along the power lines. Completed.

1.2. Communication Network

In June 2016 we upgraded the mountain communication system. The antenna was replaced by a 12-m, 6-dipole antenna, and was moved to a more accessible location near the “Caseta de comunicaciones”. Because of the proximity of the Caseta, the actual equipment, the repeater and battery packs, could be placed inside the Caseta, rather than out in the open next to the antenna. A modern, more powerful device replaced the repeater itself: an analog/digital 50W repeater. This will eventually allow us to switch over to a digital system. Completed.

A bid for the upgrade of the La Serena based equipment was received at the end of FY2016 and the upgrade was completed in the first quarter of FY2017. The upgraded system allows for use of hand held radios to communicate with the mountains, making the need for an extra base radio in the La Serena offices redundant. Completed.

1.3. Hotels Tololo, Pachón, and La Serena

In FY2016 several renovations of the Hotel Tololo and Hotel Pachón were carried out. In June the roof of the Hotel Tololo was repaired. In August maintenance on rooms in one wing of the Hotel Pachón was carried out: bathroom ceilings painted and windows sealed. Painting of the outside of the hotel started at the end of September. This project is being completed in the first quarter of FY2017, with a few details still to be completed at the time of writing, December 19 2016.

1.4. Certification of equipment

To comply with Chilean health and safety regulations, AURA has requested that critical equipment at the Mountain Facilities is brought up to standards and certified by Chilean authorities. This includes certification of the electric substations on Cerro Tololo and Cerro Pachón, heaters in all summit facilities, the policlinics, and the kitchen facilities.

In most cases the equipment or the areas where the equipment is located has to be upgraded before we can request certification by the authorities and these upgrades were planned for in FY2016. Detailed planning and execution of the upgrade projects was postponed until the positions of electric and civil engineer were

NOAO-S Facilities Operations

filled, and as a result only a few of the upgrade projects have been started in FY2016: the renovation of the Tololo kitchen and moving the Pachón policlinic. These two projects are being completed in the first quarter of FY2017.

At the time of writing, the Tololo kitchen renovation is nearing completion, and the renovated kitchen is expected to be put into use in January 2017. The Pachón policlinic has been in use since the end of October 2016, however, due to a failure of the water heater, the paramedics on duty have not moved their sleeping quarters to the rooms adjacent to the policlinic yet. As soon as the heater is replaced, the policlinic, including sleeping quarters, will be fully functional.

The other upgrades in preparation for certification by Chilean authorities are planned for FY2017. Renovation and certification of heaters in hotel buildings and mountain office buildings is planned for in Q1 and Q2; the expansion of the Pachón kitchen will be planned during Q2/Q3, with construction expected to start in Q4; and certification of the electric substations is planned for in Q3 and Q4.

1.5. Road Maintenance

In addition to regular maintenance of the road surface, some extra maintenance was carried out in the first half of FY2016 in preparation for the winter period, e.g. cleaning out the culverts and minor repairs of curbs. Major road improvement projects such as the repair of the washout at “kilometer 30” however, were postponed due to the need for expert definition. Repair of the washout is being defined in detail in Q1 of FY2017 and, a call for bids will go out at the beginning of January 2017.

2. Other

2.1. Water supply system

In January 2016 the submersible pump of the water supply system had to be repaired and a spare pump was purchased. This purchase was included in the “FY2016 Projects” cost center rather than in the cost center “Water supply”.

2.2. Maintenance shop roof repair

In August 2016 the roof over the building containing the CTIO Instrument and Facilities Operations Maintenance workshops was replaced. The Facilities Operations part of this project, 50%, was included in the “FY2016 Projects” cost center, as a La Serena based project.

2.3. Severance pay

With several staff members nearing retirement it was deemed appropriate to budget for sufficient severance pay in the FY2016 budget. This budget was included in the “FY2016 Projects” cost center. During FY2016 very little of these funds were used and, the remainder of the funds budgeted for severance pay will be carried forward to FY2017, transferred to the overhead accounts.

NOAO-S Facilities Operations

Table 1: Status FY2016 Projects

FY2016 Projects	Budget	Budget Including overhead	Spent	Enbrumbrance	Carried forward to FY2017
Planned projects					
Automatic Circuit Reclosers	30,000,000	37,189,072	41,076,717		(3,887,645)
Communication Network	9,300,000	11,528,612	14,834,929		(3,306,317)
Renovations & repairs Hotel Tololo	5,400,000	6,694,033	11,519,533	5,398,935	(10,224,435)
Renovations & repairs Hotel Pachón	6,000,000	7,437,814	953,979	689,192	5,794,644
Severance Pay	53,400,000	66,196,547	6,700,816		59,495,732
Upgrades & certifications					
Electric Substation Tololo	3,000,000	3,718,907			3,718,907
Electric Substation Pachón	7,000,000	8,677,450			8,677,450
Heaters Hotel/Kitchen Tololo	13,000,000	16,115,264	394,791		15,720,474
Heaters Hotel/Kitchen Pachón	6,000,000	7,437,814	3,406,976		4,030,839
Kitchen Tololo	9,500,000	11,776,539	4,952,535	9,470,552	(2,646,547)
Kitchen Pachón	50,000,000	61,981,786	766,809		61,214,977
Road Repair / Maintenance					
Repair of curb	30,000,000	37,189,072			37,189,072
Repair of washout	15,000,000	18,594,536			18,594,536
Other projects					
Renew pumps for water supply system			2,527,155	✔	(2,527,155)
Roof repairs La Serena Maintenance Shop			10,205,609	✔	(10,205,609)
Overhead & IPC					
IPC	9,504,000				
Business Service Charges	13,590,720				
Overhead	33,842,727				
Total	✔ 294,537,447	✔ 294,537,447	✔ 97,339,847	✔ 15,558,679	181,638,922