ACTIVITIES AND FINDINGS

Activity related to infrastructure improvements in the fourth quarter (May through July) of FY10 is described for each project below.

TUCSON INFRASTRUCTURE

Renovate computer room electrical, cooling, and fire detection/suppression systems:
   Staff completed the detailed planning and began final design work to prepare bid documents for the HVAC system changes. Testing efforts to identify remediation that may be required during the coming renovation efforts also were completed. With completion of the HVAC system renovation documents, staff will continue efforts to finalize changes to the fire detection/suppression systems and evaluate potential generators to augment the electrical system needs.

Replace and renovate electrical supply/distribution equipment:
   The engineering consultant (Monrad Engineering) has been meeting with staff to identify and clarify the electrical equipment issues to finalize the design and prepare the construction documentation. The design effort is approximately 50% complete and bid documents should be completed in the first quarter of FY11.

Replace 15-year-old building energy management and control system:
   Staff completed the preliminary planning and research but efforts have been temporarily suspended to support the final design efforts of several key projects. These projects need to be completed so that their needs can be incorporated into the final design and bid documentation for this project.

KPNM MOUNTAIN INFRASTRUCTURE

KPNNO water system renovation:
   The engineering firm (Environmental Engineering Consultants) completed their evaluation of the existing water system and the relevant EPA regulations. The design is approximately 60% complete and preliminary documentation was provided to staff for review. It is anticipated that bid documentation will be undergoing staff review in the first quarter of FY11.

Kitt Peak instrument handling facility:
   NOAO North staff completed the primary usage planning to refine the project scope and begin final development efforts. A review of the site and construction constraints was completed and documentation prepared for submittal and review. Support staff began evaluating building equipment requirements and preparing documentation to support the final design efforts.
CTIO MOUNTAIN INFRASTRUCTURE

Pachón water system renovation:
Three water pumps ordered from the US arrived. Supplier sources are being identified for the PVC-lined steel pipe, ASTM A44 schedule 40, required to replace the sections of the water line showing the greatest decay due to extensive use. Contracting sources are being identified for the improvement of the four 5000-gallon water tanks on the mountain.

Dormitories repair & renovations:
Bids for new heating and sanitary water systems, including solar energy, were let and the contract will be awarded. This project involves a significant effort that will be performed with subcontracted labor.

Pachón kitchen & dining facility:
Architectural design, engineering drawings, and technical specifications were completed. The construction bid process is in progress.

Coudé room upgrades/handling for new instruments:
No changes in this quarter. Most of the components already have been received, installed, and are in use.

Blanco 4-m computing room & console upgrade for DECam:
A contractor was chosen and the contract awarded accordingly.

Blanco 4-m mirror coating chamber:
There are still spares to be ordered.

Blanco 4-m entrance protection:
A contractor was chosen and the contract awarded accordingly. Work was started on the exit doors of the telescope building.

Blanco 4-m cooling system upgrade:
The chiller unit designated to replace one of the existing units was identified and a requisition will be placed shortly.

Cerro Tololo UPS upgrade:
There are still spares that need to be ordered.

Mountain electronic laboratory equipment renewal:
Completed.

Cerro Pachón dorm emergency generator:
The generator was purchased and delivered to Cerro Pachón, and the shelter for its installation was completed. The final connection to the power grid is underway.

Mountain meeting rooms renovation:
No work was done this period.

Mountain road guardrail installation:
A proposal to move funding from the guardrail installation project to a project to repair the CTIO Frequency Converter (a critical system that failed recently) and purchase a
new stand-by generator was approved by the NSF. The Tololo Frequency Converter was repaired and installed on site. The backup generator was purchased.

LA SERENA INFRASTRUCTURE

Machine shop modification & refurbishment:
The engineering design and bid process were completed.

La Serena laboratory equipment renewal:
Completed.

CNC milling machine:
The CNC milling machine was purchased, but it has not arrived yet.

La Serena compound water system renovation:
No work was done during this period.

La Serena meeting rooms renovation:
A new projector was purchased.

Repair and renewal of security fencing for La Serena compound:
The contract for relocation of the main gate was completed. The bid process is in progress for the installation of a new fence section.

Vehicle fleet renewal:
Ten vehicles were purchased, delivered to CTIO, and put in service.

SUMMARY OF FOURTH QUARTER EXPENDITURES

The following table provides a summary of the account, showing cumulative expenditures to date (July 31, 2010) and the total funds remaining.

<table>
<thead>
<tr>
<th>Award</th>
<th>Prior Expenses</th>
<th>Expenses This Quarter</th>
<th>Total Expenses</th>
<th>Funds Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTIO El Totoral Facilities</td>
<td>2,098,000</td>
<td>211,846</td>
<td>183,996</td>
<td>395,842</td>
</tr>
<tr>
<td>CTIO La Serena Headquarters</td>
<td>616,500</td>
<td>117,015</td>
<td>227,468</td>
<td>344,483</td>
</tr>
<tr>
<td>Tucson Headquarters</td>
<td>826,243</td>
<td>121,236</td>
<td>30,256</td>
<td>151,492</td>
</tr>
<tr>
<td>Kitt Peak Facilities</td>
<td>2,004,963</td>
<td>45,671</td>
<td>33,737</td>
<td>79,408</td>
</tr>
<tr>
<td>AURA F&amp;A</td>
<td>54,294</td>
<td>9,776</td>
<td>9,375</td>
<td>19,151</td>
</tr>
<tr>
<td>Totals</td>
<td>5,600,000</td>
<td>505,544</td>
<td>484,832</td>
<td>990,376</td>
</tr>
</tbody>
</table>