

Recommendations of the South Pole User's Committee 1999

This memorandum summarizes the recommendations of the South Pole User's Committee (SPUC) for 1999. The topics on which these recommendations are based were discussed at the annual meeting on 7 and 8 June 1999; the minutes for that meeting are available as a separate document from Antarctic Support Associates (ASA). The present memorandum was begun in executive session on 8 June and refined by committee members through email correspondence; it will be distributed in both email and paper form.

(1) South Pole Science Support during South Pole Station Modernization (SPSM) and South Pole Safety and Environmental modifications (SPSE)--- The committee appreciates that on-time and within-budget completion of these projects is important to the future of the U.S. Antarctic Program and is therefore a high priority. Construction requirements must be balanced, however, with the need to support ongoing scientific research at the Pole. Scientific research is the central mandate of the Antarctic Program. The scheduled increase in summer population at Pole is an important positive step, because it will allow science population levels that are similar to what they were in previous years, even in the midst of intense construction activity. The committee recommends that ASA plan for a constant or rising level of scientific activity during the years of SPSM. In particular, it should be assumed for purposes of long-range planning that scientific projects will either be renewed at the end of their current grant period, or replaced by a project with comparable logistical needs. ASA should plan for the movement and re-installation to new facilities of all current projects, even if their nominal termination date precedes the planned move. Resources should be devoted to assuring data continuity for long-term monitoring experiments. It is desirable to plan for simultaneous operation of experiments at old and new facilities for purposes of cross-calibration. Science support during SPSM continues to be the single most important issue for South Pole science.

(2) Power at South Pole--- The committee continues to be concerned about the possibility of electrical power shortages at Pole in the year prior to the completion of the new power station. Brownouts and blackouts are a serious danger to scientific equipment and, when they occur, can have a significant detrimental effect on ongoing research. The committee was skeptical of the model used to predict future demand, and would appreciate greater detail on the workings of the model. The increase in power consumption due to the new garage arch must be included in the power plan. ASA should plan for additional generating capacity or identify additional electrical power savings.

(3) Internet Communication capability at South Pole--- The operation of the current satellite ground facilities must be placed on a solid professional footing, with sufficient resources to assure continued operation of internet connectivity at present levels or better.

(4) Liquid Helium supply to Pole--- The current methods for Liquid Helium supply to the Pole are unreliable and subject to catastrophic single-point failures. The committee recommends purchase of several highly efficient dewars for winter storage of liquid helium. These dewars can be different from the more rugged dewars used for liquid helium transport.

(5) Maintenance of AGO and AASTO modules--- The reliability of the AGO and AASTO modules is unsatisfactory. ASA should take steps to identify the faults in the current AGO and AASTO modules and develop a plan to correct those faults, test the corrections, and apply them to all the AGO and AASTO

modules. The AGOs and AASTOs must then be maintained in such a way that their mean time between failures is several times better than has recently been achieved.

(6) Pre-season coordination meetings--- The science planning meetings between ASA personnel and individual science groups held at ASA before June of each year are important and should be continued. These highly focused discussions on the Austral summer needs of each group are valuable and cost-effective. The South Pole User's committee is unanimous in the opinion that these meetings should not be abandoned in favor of a large orientation and planning meeting later in the year. There is little benefit to South Pole science from an orientation meeting in September.

Respectfully submitted for the committee,

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