Statement from OPP-OAC regarding icebreaker capability in the US Antarctic Program

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Ship access to McMurdo Station in January and February each season is critical in order to deliver essential supplies and fuel for McMurdo Station, Amundsen-Scott South Pole Station, and all of the US Antarctic field programs that deploy from these two locations. Access of the cargo and fuel ships is feasible only if the ship channel is opened by one or more icebreakers capable of handling the thickness of ice encountered in the Ross Sea and McMurdo Sound area. This icebreaking capability, to open the ship channel and then to escort the cargo and fuel ships through the channel, is provided by the US Coast Guard.

Normally the Coast Guard sends one icebreaker to open the channel, but in the 2001-2002 and 2002-2003 seasons two Coast Guard icebreakers were required, due to the exceptionally heavy sea ice conditions exacerbated by two large icebergs (B-15 in both seasons, and C-19 this past season) that were partially blocking the expected annual exit of sea ice from the McMurdo Sound region. C-19 has moved out of the area, but as of mid-September 2003, B-15 is still there, stuck against another iceberg, C-16, which is partially grounded. It is not known if these icebergs will move from the area any time soon. Unless these icebergs move it seems likely that the sea ice conditions in McMurdo Sound will continue to be quite heavy in future years, as more multi-year ice is present and builds up to greater thickness from year to year. In the worst-case scenario, the existing US Coast Guard Polar Class icebreakers may have difficulty opening the ship channel, even when the two of them are sent to work together for this purpose.

Because it is so critical that the ship channel to McMurdo be opened each year, the US Antarctic Program and the Coast Guard together need to review the likely future status of the Coast Guard icebreakers to determine the Coast Guard's projections of future icebreaking capability and how this might impact Coast Guard activities in Antarctica, particularly if there are increased demands in both time and effort needed to open the ship channel in McMurdo Sound. Although refits of the existing Polar Class icebreakers may improve their performance, we are concerned that this may not be enough to fully address the problem. It may be that a newer and more powerful icebreaker needs to be commissioned. Alternatively, perhaps a more powerful icebreaker can be reliably contracted from a third party (such as a foreign government) if the need arises. Or, perhaps it is time for an international collaboration in icebreaking activity to be more formally established. We recommend that these avenues be explored as soon as possible. Even a one-season interruption of the cargo and fuel deliveries to McMurdo Station would have drastic long-term negative consequences for the scientific projects and other

activities of the US Antarctic Program. It clearly would not be in the best interests of the scientific community or the US National Security for this to happen.

We also note that icebreaking capability is additionally needed for scientific research purposes in both the Arctic and the Antarctic, separate from the issue of opening the ship channel to McMurdo Station. The need for capable and reliable icebreakers as scientific platforms in both of these regions is an important issue for long-term planning of changes or additions to the icebreaker fleet available to the US Antarctic Program. Recently, considerable attention has been drawn to high latitude research as a consequence of significant changes in these regions. The observed changes might be the first expressions of anthropogenically driven long-term change. Without regular observations that include icebreaker missions it will be impossible to document the evolution of the environment in the polar regions and answer this critical question.

It seems to be important that OPP either charges a new committee to (1) assess the present capacity and capability of the icebreaker fleet available for Antarctic and Arctic science and science support missions and (2) evaluate options for adequate support of the needs of the US research community, or that it works with other entities (e.g., PRB) on these pressing issues.