

B. Statutory and Regulatory Background

1. Marine Protection, Research, and Sanctuaries Act (MPRSA)

Section 102(a) of the MPRSA, 33 U.S.C. 1412(a), requires that agencies or instrumentalities of the United States obtain a permit to transport any material from any location for the purpose of dumping into ocean waters. Section 104(c) of the MPRSA, 33 U.S.C. 1414(c), and EPA regulations at 40 CFR 220.3(a) authorize the issuance of a general permit under the MPRSA for the dumping of materials which have a minimal adverse environmental impact, and are generally disposed of in small quantities. General permits currently exist for burial at sea for both cremated and non-cremated human remains, for vessels used by the United States Navy for the purposes of target practice and testing ordnance, and for vessels transported for the purpose of disposal.

The proposed towing of ice piers by the NSF from McMurdo Station for disposal at sea constitutes transportation of material for the purpose of dumping in ocean waters, so it is subject to the MPRSA. The NSF has requested the issuance of a general ocean dumping permit for its ice piers.

2. Obligations Under International Law

On October 2, 1996, President Clinton signed into law the Antarctic Science, Tourism, and Conservation Act of 1996, amending the Antarctic Conservation Act of 1978. This law is designed to implement the provisions of the Protocol on Environmental Protection to the Antarctic Treaty ("the Protocol"). The Protocol was signed by the U.S. on October 4, 1991, ratified on April 17, 1997, and entered into force on January 18, 1998. The Protocol builds on the Antarctic Treaty to extend its effectiveness as a mechanism for ensuring protection of the Antarctic environment. It designates Antarctica as a natural reserve, devoted to peace and science, and sets forth basic principles and detailed, mandatory rules applicable to human activities in Antarctica. It prohibits all activities relating to mineral resources in Antarctica, except for scientific research. It commits signatories to the Protocol (known as Parties) to environmental impact assessment procedures for proposed activities, both governmental and private. Among other things, it also requires Parties to protect Antarctic flora and fauna, and imposes strict limitations on disposal of wastes in Antarctica, and discharges of pollutants into Antarctic waters.

Several sets of regulations exist that will assist in implementation of the Protocol. These include NSF regulations regarding environmental impact assessment of proposed Foundation actions in Antarctica (45 CFR part 641), NSF waste regulations for Antarctica (45 CFR part 671), and EPA regulations regarding environmental impact assessment of non-governmental activities in Antarctica (40 CFR part 8).

EPA wishes to clarify that its proposal to issue a general permit under the MPRSA does not indicate whether the proposed activity is in compliance with other relevant obligations under the Protocol and implementing legislation. Accordingly, the responsible United States authority must make separate determinations with respect to other relevant obligations, and the Agency will coordinate with the responsible authority, as appropriate, in the Agency's consideration of the issuance of a general permit under the MPRSA.

In this regard, the Agency notes that the NSF has completed a USAP Final Environmental Impact Statement (June 1980), a USAP Final Supplemental Environmental Impact Statement (October 1991), and an Initial Environmental Evaluation (May 1992), all of which address in some aspects the construction, operation, and disposal of ice piers at McMurdo Station in Antarctica. All of these documents are available for review at the Office of Polar Programs of the NSF, 4201 Wilson Boulevard, Arlington, VA 22230 (Contact: Joyce Jatko, telephone: (703) 292-8030). The documents did not identify any potential environmental impacts from the disposal of ice piers, other than the minor navigational hazard that would be equivalent to that posed by an ice floe or a small iceberg. The Agency considered the analyses contained in the three documents cited above in developing this proposed general permit.

C. Potential Effects of Ice Pier Disposal

Because the natural creation and disintegration of icebergs occurs constantly in the Antarctic environment, the primary ice component of the NSF piers is not of environmental concern. However, the ice piers also contain approximately 21,000 feet of 1" steel cable and 650 feet of 2" steel pipe between the ice layers, that eventually will fall, as the pier disintegrates, to the bottom of McMurdo Sound, the Antarctic Sea, or the Southern Ocean. The steel cable and pipe will sink permanently to the bottom, and over considerable time, will dissolve through oxidative processes,

unless they fall into very deep anaerobic waters, where they would not dissolve.

Because there are approximately 2,100 m (6,900 ft) of cable frozen in each of the three layers of the ice pier, it is possible that during the melting process there may be loops of cable suspended from the bottom of the ice pier. These loops will remain for brief periods of time before the cable in each layer is released from the bottom of the pier due to melting. The entire length of 2,100 m (6,900 ft) of cable would then descend rapidly to the ocean floor.

The Agency has considered the possibility of these loops of cable entangling organisms in the marine environment. The only animals that could potentially become entangled in the suspended loops of cable are large whales of the Antarctic Sea or the Southern Ocean. However, these animals are known to have sophisticated natural sonar (sound navigation and ranging) systems, are able to detect and precisely identify objects at considerable distances with those systems, and normally will avoid large objects such as icebergs. In addition, because in excess of 80 percent of icebergs (and the ice pier) is submerged beneath the surface, there is no reason to believe any cetaceans will approach an ice pier, by either coming near it on the surface to breathe, or by swimming beneath it. Thus, the possibility of entanglement of large animals by suspended loops of cable from the ice pier is regarded as very minimal.

Additionally, the Agency and the NSF have discussed the possibility of seals becoming ensnared in any loops of cable hanging from the ice pier. Although seals are known to routinely haul out on ice floes to rest and to breed, EPA does not believe there is any danger from any cables embedded in the edges of the ice pier to Antarctic seal populations in their passage from the ocean to the ice surface, because any loops of cable will be visible and easily avoided.

There is no danger to any marine avian species from the release of the ice piers. Penguins, if they are in the area, can easily hop onto, and off, the edge of the ice pier, if necessary. Further, there is no permanent penguin population in the area of McMurdo Station on a year-round basis. Any penguins in the area arrive at their usual breeding rookeries in late October of each year. Their eggs are hatched in November, the chicks are fledged no later than late December of each year, and all penguins, except for a very few stragglers, are gone from the McMurdo Station area by late January every year. On those years when the ice pier must be cut loose, the detachment