

Team Report

OF

THE INSPECTION CONDUCTED IN ACCORDANCE WITH ARTICLE VII OF THE ANTARCTIC TREATY AND ARTICLE XIV OF THE PROTOCOL UNDER THE AUSPICES OF THE UNITED STATES DEPARTMENT OF STATE

February 2 to February 16, 2001

The United States has regularly exercised its right of inspection, and in 2001 sent its eleventh U.S. Antarctic Treaty Inspection Team, coinciding with the 40th anniversary of the entry into force of the Treaty. This was also the first U.S. inspection since the entry into force of the Madrid Protocol in 1998. The last U.S. inspection had been conducted in 1995. The Antarctic Treaty has been signed by 44 countries, 27 of which were conducting research on the continent, thus entitling them to the status of Consultative Party with the right to name inspectors.

The 2001 U.S. Inspection Team consisted of ten U.S. nationals designated by the U.S. Under Secretary of State for Global Affairs in accordance with Article VII of the Treaty and Article XIV of the Protocol. The members of the team, whose names were communicated to all Parties to the Treaty by diplomatic note of December 28, 2000, were: Mr. Raymond Arnaudo, Department of State; Ms. Katherine Biggs, Environmental Protection Agency; Mr. Evan T. Bloom, Department of State; LCDR Douglas A. Boerman (US Navy), Department of State; CDR George Dupree, United States Coast Guard; Mr. Bernard Link, Department of State; Mr. David Lopez, Environmental Protection Agency; Dr. Polly Penhale, National Science Foundation; Mr. Alexander Sutherland, National Science Foundation; Mr. Peter B. Ward, U.S. Fish and Wildlife Service.

Mr. Arnaudo served as the leader of the Inspection Team. Evan Bloom and Douglas Boerman were the deputy team leaders. Team members were provided with letters of appointment and identification cards for the inspection. The Inspection Team arrived in the Antarctic Treaty area on February 5, having departed Punta Arenas on February 1, 2001 on the National Science Foundation vessel *Laurence M. Gould*. The team inspected the following eleven sites: Arctowski (Poland), Ferraz (Brazil), Vernadsky (Ukraine), Juan Carlos I (Spain), St. Kliment Ohridsky (Bulgaria), Frei and Escudero (Chile), Artigas (Uruguay), Jubany (Argentina), Great Wall (China), Bellingshausen (Russia), and King Sejong (Republic of Korea). The team departed the Treaty area on February 13,

2001. Due to the ship's schedule it was necessary to plan on conducting two inspections on most of the days available. The itinerary and route of the inspection are shown in Annex A.

Summary of Findings

The Inspection Team was welcomed and treated cordially at each of the eleven stations visited. All areas were open to inspection upon request. The team found a high degree of environmental awareness and understanding of the obligations of the Treaty and the Protocol.

Arms or Military Activities

No arms violations, storage or disposal of hazardous or radioactive materials, or activities with military implications were observed. All stations observed appeared to be in compliance with the provisions of the Treaty reserving Antarctica exclusively for peaceful purposes.

Science

The level of science interdisciplinary and extremely high and included various cooperative projects between countries. Most stations supported a multi-disciplinary research program with an emphasis on research in the local area and on oceanographic research cruises in the Antarctic Peninsula region. Collectively, research was conducted in the fields of atmospheric sciences, geology and geophysics, biological and ecosystem studies, oceanography, meteorology, archaeology, cartography, chemistry and physics. There was an emphasis on environmental monitoring at some of the stations, with studies including measurements of air quality, water quality, trace metal concentrations in terrestrial and marine organisms, and impact of humans on populations of birds or mammals.

All stations reported a high degree of cooperation with scientists from other Antarctic Treaty parties and joint programs were in evidence at most stations. Several stations related this to the high degree of intense concentration fostered by the isolation of the posts, but also, significantly, the cooperative climate of Antarctica. All stations had contacts with other stations and scientists of other Treaty countries.

Scientists at the stations often provided educational lectures to all assigned personnel on topics such as conservation, protection of flora and fauna under the Antarctic Treaty and the Protocol, and recommendations for avoiding interference with wildlife.

Inspection procedures

All station managers and personnel were receptive and gracious to the Inspection Team. Most station managers acknowledged the usefulness of the inspection process, especially as a tool to improve their station operations. In this context, several managers requested a copy of the final inspection report noting that they had not seen previous reports. Station managers and personnel often view the inspection process as an opportunity to assess their station management plan and to use the information to identify any areas that could use improvement. Electronic distribution of inspection reports would ensure broader distribution.

Three countries had completed a checklist prior to the Inspection Team's arrival, which was extremely helpful to the team. It was also of great value to station personnel in that it provided a means of self-assessment to determine whether the station was in compliance with the provisions of the Treaty and Protocol. The team noted, however, the value of the inspection itself as a means of verifying the reported information.

Awareness and knowledge of obligations

The awareness of the need for environmental protection was extremely high and station operations and personnel reflected a strong commitment to environmental protection.

All station personnel interviewed had a significant level of awareness about the Antarctic Treaty and the Environmental Protocol. All countries provided training and instruction to staff members typically initiated in the home country prior to departure. Training often included instruction on the Antarctic Treaty and Protocol, protection of native plants and animals, and waste management. Medical screening for tours in isolated posts was also a usual requirement.

Station personnel appeared to be quite knowledgeable of steps to be taken to protect the environment in response to an emergency. They also appeared to be aware of the need to limit construction activities to minimize any potential environmental impact. However, station personnel were not always fully aware of the Protocol mandated reporting requirements in the aftermath of emergency situations, such as spills, fire, and shipwrecks, as stated in Article 15 or for environmental impact assessments in Article 8 and Annex I. It was possible that officials within the home government were assigned responsibility for the reporting requirements, but some station personnel were unaware of the requirements for such reporting.

Waste management

Most stations had adequate and efficient sewage treatment systems. Those that did not acknowledged the need for upgrade and indicated near-term plans for installation of

appropriate systems. Almost all stations had some system in place for monitoring sewage and gray water effluent. Several stations were also conducting environmental monitoring, including monitoring for heavy metals in biological communities and air and water quality sampling, to determine any impacts the station may be having on the environment with the intent of factoring this information into the station's management and operations.

Most stations used on-station incinerators to manage food and paper wastes. The team found no evidence of open burning, landfilling or disposal of garbage into the ice.

Emergency response

All stations indicated that they would cooperate with other stations in the event of emergencies situations, including response to oil spills or medical evacuation. The Argentine and Chilean ships patrolling the Peninsula area in the vicinity of King George Island were capable of providing spill assistance to any of the area stations. Medical evacuation could have been accomplished by helicopter or possibly by tour ship. Stations also had plans in place to share medical doctors, if necessary, and one station had a cooperative arrangement to provide medical support to a neighboring station.

Most stations, however, had little or no actual training or planning for emergency response, and some indicated a lack of familiarity with the obligation under the Protocol to take response action. Most stations left the preparations, including training or drills, in the hands of one or a few of the staff. When the team inquired about emergency preparations, it was often informed that this responsibility fell to a certain individual or team of individuals.

While some stations had pollution control booms and skimmers, and absorbent materials for fuel and oil spills, not all stations had the necessary equipment on hand to respond to an emergency which included a significant fuel release. Although stations seemed more prepared to handle a fire emergency than a fuel or chemical release, fires still posed a potentially significant problem. In the event of a large fire, personnel could be endangered and environmental harm could result from burning and release of fuel and toxic/hazardous chemicals. The team noted that not all stations had smoke detectors.

Ample fuel spill and chemical containment materials should be available at each station. Stations often relied on the re-supply ship to provide absorbent materials in the event of a release during re-fueling. However, often there were no materials on station to manage any significant release from the storage tanks or generator supply tanks. Not all stations had spill prevention and containment plans.

Fuel storage

The Inspection Team found oil, gas and other hydrocarbon materials were generally well stored and protected. There were no signs of major leaks or spills, although at most stations, there was evidence that a small amount of spillage or leakage was common.

Because a major leak or spill of oil or fuel represented arguably the greatest risk to the environment from human presence, stations should routinely examine and re-evaluate their storage facilities. Several sites had berms around the storage tanks and some had concrete pads for the tanks. Two stations combined these two safety measures, but several stations had neither.

Chemical storage

All stations maintained and stored some hazardous chemicals, in particular industrial chemicals, and recognized the importance of safe storage. In several instances, there seemed to be a misconception that paint, cleaners and solvents are not necessarily hazardous chemicals. Most stations did not provide separate dedicated storage for hazardous chemicals including industrial chemicals, although the more modern facilities did provide separate storage with containment protection, such as fire protective flooring, to control and contain any leakage or release in the event of a fire. Failure to provide these protections could result in harm to personnel and the environment.

Helicopter activity

Several stations raised concerns over disturbance to bird and seal colonies because of helicopter traffic. Giant petrel colonies in particular were singled out, as these birds are highly susceptible to disturbances. Some stations used helicopters for support operations, and the threat of increased activity by tour operators was also noted.

Domestic animals

The team found no domestic animals at any station.

Plants

Although most stations had no plants on station, some grew vegetables and some grew decorative plants, which they cited as being important for staff morale.

Communication

The team found INMARSAT numbers shown in the Council of Managers of National Antarctic Programs (COMNAP) listings were not always current and notification of our intention to inspect in most cases was conducted by radio. The ever-improving state of electronic communications should allow telephone numbers, radio frequencies and e-mail addresses to be kept more current in the COMNAP directory.

Tourism

Overall, tourism did not appear to be a major problem for stations, although some stations raised concerns, including the possibility of large increases in the number of tourists. Visits by tour groups had now become fairly routine at most stations. Tour operators usually called ahead for permission to visit the station and agreement or

understandings between the stations and the tour operators controlled the number of tourists on station at any one time. In certain situations where tourism had posed potential problems, some tourism controls had been implemented, such as marked walking paths and signs delineating “no entry” or “off limit” areas.

Station managers pointed out that tour ships provided a service to some stations by assisting with medical evacuations, transporting station personnel to stations, and providing some re-supply or waste removal service.

Recommendations

Fuel Storage

Regular ultrasound testing and scheduled maintenance including protective painting for all tanks should be adopted. Berms or protective trenches should surround tanks. As storage tanks are replaced, the new tanks should be double lined and installed with an under liner and berm. Excess tanks, including those under-utilized or no longer in use, should be cleaned, stabilized, and ultimately removed.

Hazardous Substance Storage

Separate storage with containment protection, such as fire protective flooring should be provided to control and contain any leakage or release in the event of a fire. Ideally, this would be in a separate building or site, but where space is limited, the materials should be safely distanced from work and living areas. The storage area should also be properly ventilated to prevent fume build-up.

Treaty and Protocol Obligations

Station managers should routinely review the reporting requirements under the Protocol for emergency situations, such as spills, fire, shipwrecks (Article 15), as well as for environmental impact assessments (Article 8 and Annex I).

Inspection checklist

Station managers should review and complete the Inspection Checklist for their stations, which was adopted at the XVIIIth Consultative Meeting. As noted, this provided a useful means of self-assessment to help determine the station’s compliance with the provisions of the Treaty and Protocol.

Emergency response

Stations should routinely review procedures for emergency response to oil spills and evacuations for fire or chemical alerts, as well as the obligations for compliance under the Protocol. All main buildings should be equipped with smoke detectors or fire detection equipment. Fuel spill and chemical containment materials should be available on station

in adequate supply to respond effectively to the maximum potential spill. Station managers who relied on the re-supply ship to provide absorbent materials in the event of a release during re-fueling could find that there are not enough materials on hand in the event of a real emergency. Stations should have a spill prevention and containment plan that specifically addresses the types of storage containers at the station.

Helicopter use

Stations that operated or relied upon low-flying aircraft should regularly review the potential disturbance to nearby bird and seal colonies.

Communication

Station managers should review and update telephone numbers, radio frequencies and e-mail addresses listed in the COMNAP directory.

Tourism

Stations should be encouraged to study or monitor the effect of tourist activity on protected areas and colonies of birds and mammals.