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**WASTE MANAGEMENT CONCEPT
AT KOREAN ANTARCTIC RESEARCH STATION
KING SEJONG, IN KING GEORGE ISLAND**

Agenda Item 13 b

(Submitted by the Republic of Korea)

Waste Management Concept at Korean Antarctic Research Station,
King Sejong, in King Geoge Island

1. Introduction

This brief information intends to introduce the Waste Management Concept at Korean Antarctic Research Station, King Sejong, since the Protocol on Environmental Protection was signed in 1991.

In Annex A, it is said that all member countries try to reduce the amount of waste and to remove the waste from Antarctica. It was also decided to dispose of the waste in the countries of origin or in countries that signed international agreement like the Basel Convention. Korea is carrying out the waste management at King Sejong Station according to these guidelines to protect Antarctic Environment and the dependent ecosystems.

2. King Sejong Station

King Sejong Station, which was built in February 1988, locates in Barton Peninsula, King Geoge Island at 62° 13' 23" S, 58° 47' 21" W.

About 15 scientists and supporting staffs dispatched every year to the station to conduct scientific activities around a year and to support summer research party.

King Sejong Station consists of 7 container(40 feet), 11 building, and 6 oil tank(150M³ each). The total floor area of the building has increased from 1,386M² in 1988 to 2,651M² in 1991.

Electric power for the station is provided by three 113KW and two 275 KW diesel generators. Double chamber incinerator and sewage treatment system have been operated since 1988.

3. Waste Management Concept at King Sejong Station

3.1 Measures taken in advance to avoid rubbish

At planning stage for the supply to the station, we are taking into account on the environmental degradability of the products and their packing boxes.

Educational and orientation program for waste management and waste reduction have been developed and implemented for all participants before and during the season.

3.1.1 Choice of products

Knowledge about the ingredients or components of the goods is considerably important. The relation between the utility value and the ingredients or components is checked, and the data of the different alternative products are compared before the final decision of choice.

The material currently used at King Sejong Station are as follows,

Fuel : unleaded gasoline for snow mobile and rubber boat, 0.3% weight sulfur diesel oil for generators

Paint : no heavy metals included and lower content of solvent

Detergents : biologically degradable one

3.1.2 Packing box

The packing should be reusable or at least should be possible to recycle, and polyvinyl-chloride is avoided, because of its environmental hazardous character when incinerated. The reduction of weight and volume directly results in the reduction of transport expenditure and the possibility of environmental damages.

We try to select light and reusable packing boxes, thus reducing the amount of wastes.

3.2 Waste Management during the season

3.2.1 Treatment of domestic waste

Domestic wastes are collected and sorted in classes. These classes are paper, synthetic material, glass, metal and other wastes.

To reduce the volume of the waste at King Sejong Station, a hydraulic press compacts it onto 1/3 to 1/5 of its initial volume. It is stowed in a container and it is taken out of Antarctica once a year.

3.2.2 Treatment of non-domestic waste

Also the non-domestic waste is removed from the Antarctica. Non-domestic waste are radioactive materials, used batteries, waste oil, any waste containing rubber, oil or heavy metal, etc. These materials are stowed in suitable containers which are removed every year.

3.2.3 Purification of waste water

During the season, a sewage treatment plant is installed at station. This system purifies sewages biologically and chemically.

In addition, a sludge treatment is carried out, enabling us to remove the sludge from the Antarctica.

The cleaning capacity of the sludge treatment plant meets the requirements of the international rules.

3.3 Disposal of waste

Once a year the King Sejong Station is supplied by a vessel. The wastes are brought to the continent by ship after logistic supplying is completed. The waste is disposed out of the Antarctica according to the requirements of the Basel Convention.

3.4 Future

The exhaust gas of the diesel generators will be cleaned by catalytic converters, which reduce carbon monoxide, hydrocarbons, aldehyds and the black smoke.

Also, it is being considered to install a wind energy plant. This would further reduce the fuel consumption and in consequence the amount of arising emissions.

4. Conclusion

This document shows briefly how the Korean Antarctic Program treats waste management at King Sejong Station. Before we prepare logistic supplying to the station, all kinds of rubbish and extensive packing should be considered to reduce and avoid environmental damages. Heavy packing materials are replaced by more lightweight ones.

All wastes are collected during overwintering period and removed from the Antarctica once a year.

King Sejong Station will endeavour to minimize the human impact and thus cope with the requirements of the Protocol to the Antarctic Treaty.