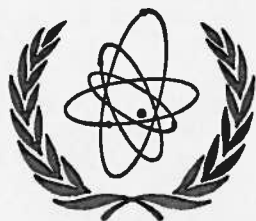


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COMMUNICATION OF THE USSR STATE COMMITTEE
ON THE UTILIZATION OF ATOMIC ENERGY

The attached communication is being circulated at the request of the Resident Representative of the Union of Soviet Socialist Republics.

COMMUNICATION
OF THE USSR STATE COMMITTEE ON THE UTILIZATION OF ATOMIC ENERGY

On 12 December 1987, the satellite "Cosmos-1900" was placed in orbit for the purpose of observing ocean surfaces. On board the satellite there is a small nuclear power unit of the reactor type. In April 1988 radiocommunication with this satellite was interrupted. Over the past five months since then, the main auxiliary systems on board the satellite - including the power supply system - have been functioning normally and it is continuing its guided flight, gradually descending. On 22 September 1988, the orbital parameters of Cosmos-1900 were: apogee - 214 km and perigee - 193 km.

In accordance with the recommendations of the United Nations Committee on the Peaceful Uses of Outer Space, the satellite "Cosmos-1900" is equipped with a basic and a redundant system of radiation protection. The basic system is designed to deflect the nuclear power unit into a high (approximately 800 km) orbit, the residence time in which (about 300 years) would ensure reduction of the radioactivity to a safe level. The redundant system, which is triggered in the event of failure of the main system, is designed to separate the core from the body of the reactor during descent into the atmosphere and aerodynamic heating at an altitude of about 100 km. This separation of the core and its independent entry into the atmosphere guarantees its complete burnup in the dense layers of the atmosphere and dispersal of the fuel in such a way that it would not have any appreciable effect on radiation conditions in the region of fallout.

The design of the satellite provides for automatic switching-on of the deflection system in the event of disruption of the guidance system, sealing loss in the instrument section or malfunctioning of the on-board power-supply system. In the absence of radiocommunication with the satellite, the switching-on could take place at any moment up to the triggering of the redundant radiation protection system.

At the present time, the situation of Cosmos-1900 cannot, in the opinion of Soviet experts, be characterized as a nuclear accident within the meaning of Article 1 of the Convention on Early Notification of a Nuclear Accident of 26 September 1986. Nevertheless, the Soviet Union, in a spirit of good will and taking into account the concern expressed by a number of States, considers it necessary to include the following information in the present communication.

According to predictions, if there is no earlier deflection of the nuclear-power unit, the satellite will, under stabilized flight conditions, reach an altitude of the order of 100 km in the period 4-8 October. The core of the reactor consists of 37 cylindrical fuel elements with beryllium end reflectors. A uranium-molybdenum (3 weight per cent) alloy 90% enriched in uranium-235 is used as nuclear fuel (total weight 31.1 kg). Towards mid-October 1988, the fission-product activity in the fuel due to long-lived

isotopes with half-lives of more than two days will amount to 40 000 curies, and the induced activity in the structural components of the reactor (mainly cobalt-58 and manganese-54) will be about 300 curies. Upon entry into the dense layers of the atmosphere and triggering of the redundant system, the reactor core will break up into finely divided particles 60 to 880 microns in size which are not soluble in natural media and will not enter food chains. The level of exposure of the population at peak fallout will then not exceed 0.5 rem per annum.

The reactor has a beryllium side reflector including six cylindrical rods of mass 3.6 kg each and dimensions 100 mm and 250 mm, the activity of which will be insignificant (50 millicuries). If they should reach the earth's surface, there would be no direct danger to the population. However, if the rods are found, they should be removed. Should the remaining parts of the satellite reach the earth's surface, they will constitute no radiation hazard.

At the moment, with Cosmos-1900 still continuing in guided flight, it is very difficult to predict accurately the time and place of its entry into the dense layers of the atmosphere. The competent services in the Soviet Union are continuing to keep the satellite under careful observation and are making the appropriate calculations. Additional information will be communicated as it becomes available.

The Soviet Union confirms its steadfast intention of complying strictly with its obligations under the Conventions of 26 September 1986 on Early Notification of a Nuclear Accident and on Assistance in the Case of a Nuclear Accident or Radiological Emergency, and also the corresponding bilateral agreements and recommendations of the United Nations Committee on the Peaceful Uses of Outer Space.

The Director General of the IAEA is requested to circulate this communication to the States Members of the Agency.