UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

September 1, 1988

NRC INFORMATION NOTICE NO. 88-71: POSSIBLE ENVIRONMENTAL EFFECT OF THE REENTRY OF COSMOS 1900 AND REQUEST FOR COLLECTION OF LICENSEE RADIOACTIVITY MEASUREMENTS ATTRIBUTED TO THAT EVENT

Addressees:

All holders of operating licenses or construction permits for nuclear power reactors, fuel cycle licensees, and Priority 1 material licensees.

Purpose:

This information notice is being provided to: 1) alert licensees to the anticipated reentry of a U.S.S.R. satellite, COSMOS 1900, which is powered by a nuclear reactor; and 2) request voluntary reporting of any licensee environmental radioactivity measurement data probably caused by that event.

In order to enhance Federal and State monitoring programs, all facilities with ongoing environmental monitoring programs are requested to consider the NRC request to report confirmed anomalous environmental radioactivity measurements likely to have been caused by radioactive material released during the reentry of COSMOS 1900. However, the request contained in this information notice does not constitute an NRC requirement.

Description of Circumstances:

On May 13, 1988, the Soviet News Agency Tass announced that the Soviets had lost radio contact with COSMOS 1900, a satellite launched on December 12, 1987. Tass noted that COSMOS 1900 carries a nuclear power plant which is believed to still be operating. The Soviets have indicated that the satellite is continuing to maintain its orientation. However, if nothing is done to maintain the orbit, the satellite will eventually decay and enter the earth's atmosphere. Latest predictions are that the satellite will reenter between mid-September and early October. This prediction is subject to uncertainties, however, and the reentry could occur sooner if the stability of the satellite changes.

The primary means of preventing the reentry of a radioactive nuclear core is to boost the reactor into a higher orbit to allow for decay. By radio command from earth, the nuclear reactor would be ejected and moved to an orbit

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in excess of 800 kilometers. Since this method has apparently failed, there is a system designed to automatically separate the core from the satellite. If upon reentry, there has been a separation, it is expected that the reactor would burn up completely like COSMOS 1402 in 1983 and no debris would reach the earth's surface. There is, however, uncertainty about the condition of any of these systems. If the satellite and nuclear power plant remain intact, it is believed that debris may reach the earth's surface like the 1978 reentry of COSMOS 954 which deposited a significant amount of radioactive debris on Canada.

Discussion:

This notice is primarily to alert licensees of the reentry of COSMOS 1900. It is highly unlikely that debris from the reentry will impact any part of the U.S. However, there is some probability that increased radiation levels may be detected. In that case, in order to supplement and reinforce the U.S. Environmental Protection Agency (EPA) nationwide surveillance program, NRC licensees, as part of their routine environmental monitoring program, are requested to voluntarily provide the following information:

> Report to the NRC any anomalous environmental radiation or radioactivity measurement that can be reasonably assumed to have resulted from the reentry of COSMOS 1900. The NRC would like confirmed measurement results from the licensee's routine environmental monitoring program to be reported via facsimile to the NRC Operations Center (301/492-8187; verification 301/951-0550) within 24 hours of determining that material from the reentry has been measured.

The reporting format is requested to provide for:

- Sample date(s) and approximate location(s)
- Medium or pathway (e.g., air particulate, soil)
- Type of analysis (e.g., gross beta, gamma spectrometry)
- Statistical data (mean, range, number of samples)

Any data provided by NRC licensees will be transmitted to EPA. Because of the sensitivity and broad scope of existing licensee programs, augmentation of NRC licensee environmental monitoring programs is not being requested.

We appreciate your cooperation with us in this matter. If you have any questions regarding this matter, please contact the technical contact listed below or the Regional Administrator of the appropriate NRC regional office.

This request is covered by Office of Management and Budget Clearance Number 3150-0011 which expires December 31, 1989. The estimated average burden hours is 4 man-hours per licensee response, including assessment of the request, searching data sources, gathering and analyzing the data, and preparing the reports. Comments on the accuracy of this estimate and suggestions to reduce

the burden may be directed to the Office of Management and Budget, Room 3208, New Executive Office Building, Washington, D.C. 20503, and to the U.S. Nuclear Regulatory Commission, Records and Reports Management Branch, Office of Administration and Resources Management, Washington, D.C. 20555.

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Bernard H. Weiss, AEOD
(301) 492-7053

Attachment: List of Recently Issued NRC Information Notices

LIST OF RECENTLY ISSUED
NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
88-70	Check Valve Inservice Testing Program Deficiencies	8/29/88	All holders of OLs or CPs for nuclear power reactors.
88-69	Movable Contact Finger Binding in HFA Relays Manufactured by General Electric (GE)	8/19/88	All holders of OLs or CPs for nuclear power reactors.
88-48, Supplement 1	Licensee Report of Defective Refurbished Valves	8/24/88	All holders of OLs or CPs for nuclear power reactors.
88-68	Setpoint Testing of Pressurizer Safety Valves with Filled Loop Seals Using Hydraulic Assist Devices	8/22/88	All holders of OLs or CPs for nuclear power reactors.
88-67	PWR Auxiliary Feedwater Pump Turbine Overspeed Trip Failure	8/22/88	All holders of OLs or CPs for nuclear power reactors.
88-66	Industrial Radiography Inspection and Enforcement	8/22/88	All NRC industrial radiography licensees.
88-65	Inadvertent Drainages of Spent Fuel Pools	8/18/88	All holders of OLs or CPs for nuclear power reactors and fuel storage facilities.
88-64	Reporting Fires in Nuclear Process Systems at Nuclear Power Plants	8/18/88	All holders of OLs or CPs for nuclear power reactors.
88-63	High Radiation Hazards from Irradiated Incore Detectors and Cables	8/15/88	All holders of OLs or CPs for nuclear power reactors, research reactors and test reactors.

OL = Operating License
CP = Construction Permit

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*AEOD	*OGCB:DOEA	*OGC	*C:OGCB:DOEA	D:IMNS:NMSS	D:DOEA
BWeiss	VHodge	STreby	CHBerlinger	GSjoblom	CERossi
8/26/88	8/24/88	8/24/88	8/24/88	8/29/88	8/29/88

to reduce the burden may be directed to the Office of Management and Budget, Room 3208, New Executive Office Building, Washington, D.C. 20503, and to the U.S. Nuclear Regulatory Commission, Records and Reports Management Branch, Office of Administration and Resources Management, Washington, D.C. 20555.

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AEOD	OGCB:DOEA	OGC	C:OGCB:DOEA	D:DOEA	DD:IMNS:NMSS
BWeiss	VHodge	STreby	CHBerlinger	CERossi	GSjoblom
8/26/88	8/24/88	8/24/88	8/24/88	8/ /88	8/ /88

Vern Hodge