

Advanced Technology for Commercial Production

3998. SHRI KAILASH MEGHWAL: Will the PRIME MINISTER be pleased to state:

(a) the major constraints in the translation of advanced technology particularly nuclear into commercial production of goods;

(b) whether the constraints related to global perceptions; and

(c) if so, the details thereof?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE IN THE DEPARTMENT OF EDUCATION IN THE MINISTRY OF HUMAN RESOURCE DEVELOPMENT (PROF. M.G.K. MENON): (a) to (c). Information is being collected and will be laid on the Table of the House.

Radiation exposure and its effects

3999. SHRI KAILASH MEGHWAL: Will the PRIME MINISTER be pleased to state:

(a) whether exposure to radiation at the Atomic Energy plants in India leads to Leukaemia and Gene Mutation in the father's sperm;

(b) whether the Government have warned, as in other countries, the prospective fathers to refrain from fathering a child not only while they are working in the plants but also for at least one year after leaving the plant; and

(c) if so, the details thereof?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE IN THE DEPARTMENT OF EDUCATION IN THE MINISTRY OF HUMAN RESOURCE DE-

VELOPMENT (PROF. M.G.K. MENON): (a) Exposure to radiation beyond permissible limits whether from a Nuclear Power Plant or from other causes including natural environmental background may lead to cancer. The effect is probabilistic and cannot be distinguished from cancer induced by other equally well known agents such as pollutants, tobacco and socio-economic factors.

(b) Government have seen reports about opinion of a foreign expert about the need for counselling radiation workers. Government have not issued any warning to the fathers to refrain from fathering a child not only while they are working in the plants but also after leaving the plant, since there is no evidence for this affect at the limited doses to which the workers are exposed to and which is monitored.

(c) Does not arise.

Advancement of Thar Desert

4000. SHRI KAILASH MEGHWAL: Will the PRIME MINISTER be pleased to state:

(a) whether Government are aware of an increasing pace of ecological destabilisation in Rajasthan due to the advancement of Thar Desert;

(b) whether Government propose to take immediate remedial measures; and

(c) if so, the details thereof?

THE MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT AND FORESTS AND MINISTER OF STATE IN THE MINISTRY OF PROGRAMME IMPLEMENTATION (SHRIMATI MANEKA GANDHI): (a) The results of research conducted by the Central Arid Zone Research Institute (CAZRI), Jodhpur and the analysis of Satellite imageries do not support the view that the Thar Desert is advancing. However, the

resources within the desert are showing indications of deterioration due to over exploitation and improper land use.

(b) and (c). A number of measures such as afforestation, pasture development, shelter belts, sand-dune stabilisation and water conservation are under implementation under the Desert Development Programme, Drought Prone Area Programme, Integrated Rural Development Programme and Wasteland Development Programme to prevent ecological degradation.

Re-establishment of Telecommunication links with INSAT-1C

4001. SHRI GOPI NATH GAJAPATHI: Will the PRIME MINISTER be pleased to state:

(a) whether the scientists at the Indian Space Research Organisation (ISRO) were making efforts to re-establish telecommunication links with INSAT-1C which lost earthlock in November last year;

(b) if so, whether they have been able to achieve success in the above matters; and

(c) if not, the reasons therefor?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE IN THE DEPARTMENT OF EDUCATION IN THE MINISTRY OF HUMAN RESOURCE DEVELOPMENT (PROF. M.G.K. MENON): (a) to (c). INSAT-1C spacecraft lost one of its power buses on July 29, 1988 soon after its launch and has been operating since then at half the power only. The spacecraft had lost all redundancy in the vital systems. It had also been suffering from command received anomaly. During such periods, the spacecraft does not accept any commands sent from the ground. At the time of the loss of

lock of INSAT-1C on November 22, 1989, due to a Single Event Upset (SEU) of the Attitude and Orbit Control System (AOCS) caused by excessive solar radiation activity, the spacecraft was suffering command receiver outage. As the commands could not be sent into the spacecraft, the essential task of shedding of all the loads on the spacecraft to minimise the drain on the battery could not be achieved. Consequently the battery which is expected to provide power to the spacecraft till such time as the spacecraft can be brought to the safe sun acquisition mode got completely drained. Thus, the telemetry contact with the spacecraft was totally lost. As the temperature environment on the spacecraft got continuously degraded the command capability also became extremely limited.

When telemetry contact with the spacecraft was reacquired after a few days it was seen that the spacecraft subsystems were at extremely cold temperatures. Also due to the spacecraft reorientation the spacecraft power generation situation had worsened making it impossible to place it in the sun acquisition mode. Because of the temperature conditions, some of the subsystems have also failed and now it is not possible to retrieve the satellite.

It may be noted that from the very beginning with the serious loss of power, INSAT-1C has been considered as a 'total loss' for insurance purposes and an amount of US Dollars 68.316 million (about Rs. 111.00 crores) has been received from the Insurers against the total insured value of US Dollars 72.6 million. Nearly half the capacity of INSAT-1C was being used for about one year till the loss of lock occurred.

Expansion of Farm Forestry

4002. SHRI GOPI NATH GAJAPATHI: Will the PRIME MINISTER be pleased to state: