(c) The average outage during this period was in the range of 1-2 per month.

(d) A thorough check of tubes of the moderator heat exchanger was undertaken. Leaky as well as potentially leaky tubes have been identified and plugged. At times grid voltage and frequency variations affect the performance of the unit and also cause outages. This matter is under continuing discussion with the concerned Electricity Boards and the Central Electricity Authority for formulating a long term solution to these problems. A continuous and ongoing review of the operational problems in being carried out to improve the working of the station.

Withdrawal of Excise Duty on Tyres and Tubes

378. SHRI S. M. KRISHNA: Will the Minister of INDUSTRY be pleased to state:

(a) whether the tyre industry has made a representation to his Ministry for the continued withdrawal of Excise duty on Tyres and Tubes which was in force uptil 31-3-1980 so far as the newly set up units are concerned in view of the high cost involved in putting up the plant and machinery; and

(b) if so, his reaction thereto?

THE MINISTER OF STATE IN THE MINISTRY OF INDUSTRY (SHRI CHARANJIT CHANANA): (a) and (b) Representations have been received for the extension of the excise duty relief scheme beyond 31-3-80 to the new tyre manufacturing units which were set up at high capital cost. A final decision, however, has not been taken.

Utilisation of Solar Energy

379. SHRI NAVIN RAVANI:
SHRI SURYA NARAYAN SINGH:
SHRI MANPHOOL SINGH CHAUDHARY:

Will the PRIME MINISTER be pleased to state:

(a) what is the progress monitored so far by the High powered Committee regarding further utilisation of solar energy;

(b) what is the indigenous production of solar power pumps and agency manufacturing it;

(c) whether it is a fact that an Indian private company has been allowed to collaborate with a multinational company to produce such pumps in Orissa and sell those in South East Asian countries at premium prices; and

(d) if so, what steps have been taken to increase indigenous production and prevent exploitation by multinationals?

THE MINISTER OF STATE IN THE MINISTRY OF DEFENCE (SHRI O. P. N. SINGH): (a) A Statement is attached.

(b) Solar pumps are still at the technology development stage. R&D efforts aimed at improving performance and reducing cost are underway. A few solar pumps powered by solar cells have been successfully demonstrated. These have been developed under the sponsorship of the DST at the Central Electronics Limited, Sahibabad (U.P.):

(c) No, Sir.

(d) The R&D efforts already underway is being upscaled and fabrication of solar cells modules and systems are being taken up for a major demonstration programme including solar pumps. The scale of subsequent indigenous production will depend on the extent of economic competitiveness achieved during the demonstration programme.

Statement

Utilisation of Solar Energy

The most important renewable source of energy for mankind is the Sun-especially for India where there is an abundant supply of sunshine. Government of India therefore propose to accord high priority to the development of technologies for utilization of Solar Energy for a wide range of applications with special emphasis on its use on a decentralised basis particularly in rural areas. The Department of Science and Technology has already taken up a coordinated programme of systematic R & D in solar technology, by availing of the infrastructure facilities and expertise existing at the various institutions in the country such as the Institutes of Technology, National Laboratories of the CSIR, R & D Division of the BHEL, Central Electornics Ltd., and others. This programme has as its objective R & D that can lead rapidly to practical application.

The current activities of the Department seek to expand the programme with special emphasis on the following three main areas of solar technology.

(a) Development of Solar Thermal devices and systems based on the thermal effects of solar radiation;

(b) Development of Photovoltaic devices and systems for direct conversion of solar energy into electricity;

(c) Bio-mass and bio conversion technology.

Solar Thermal Devices:

In the area of solar thermal devices, development of solar collector technology is being actively pursued. Top priority has been accorded to improving efficiency and cost effectiveness for different specific applications. The programme include Development of corrosion resistant materials for absorber plates, use of selective coatings and paints to improve efficiency of collctors, fabrication of parabolic surface and paraboloid dishes and tracking systems. Basic technology for flat plate collectors has been developed with a veiw to commercialisation.

Prototype grain dryers of different capacities have already been developed and these are at present undergoing field trails. A 10-tonne per day capacity solar grain dryer has been installed under the auspices of DST at the Central State Farm near Ludhiana by the NIDC. A small capacity solar dryer of 500 kgs per day capacity for cash crops such as gineger, arecanut, turmeric etc. has been installed at Gauhati. A project for tobacco drying using solar energy has also been initiated in Andhra Pradesh. Further development of solar dryer for agricultural and food products is envisaged, along with their widespread utilisation.

Several types of solar water heating systems are being developed. Performance evaluation of the experimental solar water heating systems put up by BHEL at Quatab Hotel in Delhi and a Guest House at Hardwar,