(ग) जवाहर सागर-जल विद्युत स्कीम के 1972 में पूर्ण होने की संभावना है। राराग प्रताप सागर प्रस्मु विद्युत केन्द्र की 200 मैंगावाट की प्रथम यूनिट के 1972 में ग्रीर उसके पश्चात दूसरी यूनिट के 1974 में चालू होने की संभावना है। ब्यास यूनिट-i ग्रीर ब्यास यूनिट-ii के प्रन्ता गंत शेष सभी यूनिटों के पौचवी योजना में चालू होने की संभावना है।

उपयुंबत के प्रतिरिक्त, राज्य बिजली बोर्ड में निम्नलिखित स्कीमों के कार्यन्वियन के लिए प्रस्ताव किया है:—

- 1. पलाना ताप केन्द्र $(2 \times 25$ मैगावाट)
- 2. सवाई माघोपुर ताप केन्द्र $(3 \times 62.5$ मैगावाट)

इन स्कीमों की सकनीकी जांच हो रही है।

Regulation of voltage and Reduction in Frequence of Interruptions in Power Supplies

106. SHRI D. D. DI'SAI: Will the Minister of IRRIGATION AND POWER be pleased to state:

- (a) the steps Government have taken or the regulation of voltage and reduction in frequent interruprions in the supply of power in the countries;
- (b) whether the cost of power generation and the rates charge from the public have gone down progressively all the world over; and
- (c) if so, the steps Government have taken or propose to take for reducing the cost of power due to economy of scale?

THE DEPUTY MINISTER IN THE MINISTRY OF IRRIGATION AND PO-WER (SHRI SIDDHESHWARPRASAD): (a) Great emphasis is being laid in developing and strengthening grid net-works all over the country.

Advantage of technological developments is being continuously taken, power research is being stepped up and sophisticated features are being introduced increasingly in the planning, designing and maintenance of power systems. These are:

- (i) Use of high speed switchgears and relays.
- (ii) Adequate protection against lightning for sub-stations and transmission lines.
- (iii) Use of shunt capacitors and synchronous condensers.
- (iv) Quick response excitation at the generating stations.
- (v) Live line maintenance of transmission lines.
- (vi) Systematic maintenance scheduling of transmission system and generating plant.
- (vii) Use of underground cables in congested urban areas.
- (viii) Limiting the lengths of rural feeders to a maximum of 30 to 40 KM and loading to 1 MVA.
 - (ix) Arrangements for training operating personnel for Power Stations and live line maintenance of transmission lines.

A committee is already making a comprehensive study of the problems of power supply in rural areas in consultation with the State Electricity Boards. The Government of India constituted, in 1969, the Power Economy Committee including top experts available in the country and also a few foreign exports. The Committee was to review, amongst other things, the conditions of power supply including reliability, voltage fluctuations/etc., in the country. The report of the Committee is a waited.

- (b) The cost of power generation and the overall rates for sale of power are reported to have been brought down progressivly over the years in the USA and in Canada. In England, however, the cost of power had been rising since World War II. The upward trend appears to have been arrested since 1968-69 with the installation of much larger and technologically more efficient plants.* In India too, the cost of power generation and supply have been progessivrely rising.
- (c) Following are the measures which the Government have introduced to reduce the cost of power:
- Introduction of larger sized generating units and EHV transmission lines wherever feasible.
 - (ii) Development of Grid networks in each State and Region enabling integrated operation of various power systems.
 - (ii) Better coordination of the available hydro, thermal and nuclear generating plants.

The Power Economy Committee set up by the Government in 1969 with the main objective of reviewing techno-economic aspects of power supply in India has examined the various aspects of the problem and their report is expected shortly.

Indigenous manufacturing unit are being geared up to manufacture the larger sizes of generating units that would be required.

Delays in Deliveries of Power Plants vis,a-vis Fourth Plan Targets

- 107. SHRI D. D. DÉSAI: Will the Minister of IRRIGATION AND POWER be pleased to state:
- (a) whether the Indian Electrical Machinery and Equipment Manufacturing Industry are fully equipped to supply power transmission, distribution and utilisation equipments etc. for an annual 3 million Kws increased capacity;
- (b) the details of shortfall in installed generating capacity in terms of time table for commissioning power generating projects; and
- (c) the delays in deliveries of power plants vis-a-vis the Fourth Plan's commissioning tergets as well as delivery time committed by the suppliers to buyers and the actual delay in respect of each power generating plant during the last three years?

THE DEPUTY MINISTER IN THE MINISTRY OF IRRIGATION POWER (SHRI SIDDHESHWAR PRA-**SAD**): (a) An assessment made in 1968 indicated that the indigenous manufacturing capability for power transmission, distribution and utilisation equipment, etc. existed for an annual growth in installed generating capacity of 2.5 million KW. The Fourth Five Year Plan envisages the addition of generating capacity of 9.2 million KW (of which 4.9 million KW is to be suppld by the indigenous manufacturers) representing an average annual growth of 1.8 million KW.

(b) and (c). It has assessed that short-falls in the commissioning of power station during the Fourth Plan would be of the order of 1.8 million KW; out of this 0.7 million KW is in respect of projects tied to imported generating plant and equipment and the belance of 1.1 million KW is in respect of pojects tied to indigenous gene-