

**GOVERNMENT OF INDIA  
ATOMIC ENERGY  
LOK SABHA**

UNSTARRED QUESTION NO:2018  
ANSWERED ON:23.07.2014  
DESALINATION OF SEA WATER  
Patel Smt. Jayshreeben

**Will the Minister of ATOMIC ENERGY be pleased to state:**

- (a) whether sea water can be desalinated to produce drinking water using nuclear energy;
- (b) if so, the details thereof;
- (c) whether the Government proposes to set up such projects; and
- (d) if so, the details thereof, location-wise?

**Answer**

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (DR. JITENDRA SINGH):

(a) to(d) Yes, Sir. Desalination of seawater is possible by using either Reverse Osmosis (RO) or Thermal processes. Electrical and/or thermal energy from atomic power station or nuclear research reactor can be used for this purpose.

Bhabha Atomic Research Centre (BARC) has developed desalination plants based on both Reverse Osmosis (RO) as well as thermal processes. An eighteen lakh (18 lakh) litres per day capacity sea water desalination plant operating on the Reverse Osmosis (RO) process has been setup, as part of Nuclear Desalination Demonstration Project (NDDP) at Kalpakkam, Tamil Nadu. Another plant, a Multi-Stage Flash (MSF) Sea Water Desalination Plant with a capacity of forty five lakh (45 lakh) litres per day has also been setup at Kalpakkam as a part of NDDP. It is located adjacent to Madras Atomic Power Station (MAPS) and uses low pressure steam as energy input for MSF desalination plant. The hybrid MSF-RO plant is operated to produce distilled water for high end industrial applications and potable water for drinking and other applications.

Currently, the NDDP is the only one plant of its kind operating in the world with the objectives of utilising nuclear heat and electricity to achieve desalination.