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Editorial Notes

NUCLEAR POWER:

The attention of the world in general and of India in particular has again been drawn dramatically to the use of Nuclear power by the report of ~~an~~ intimating Nuclear explosion in China.

India has declared its intention to avoid the production of Atom bombs and Nuclear weapons, since their use results in the destruction of masses of peaceful citizens and non-combatants, which would result in the end in the destruction of all mankind. We should however not lose sight of the uses of Nuclear power for peace. Where Hydro electric power is not available, where coal and oil are scarce and difficult to transport, Nuclear power is the best solution.

The Cost of Nuclear power depends on the availability of uranium to feed the Nuclear power reactors furnaces.

Production of uranium is therefore a desirable object particularly in India where there are vast areas whose development is held up for want of suitable power and transport.

India has large reserves of Thorium which can be converted into Uranium—233 by bombarding it with Neutrons set free in Nuclear fission of Plutonium.

Plutonium, however, has to be extracted by chemical separation from matter in the "spent" fuel elements produced by nuclear fission of uranium in an uranium-fuelled reactor.

India's uranium reserves are ^{not} large enough to maintain a long~~er~~ range nuclear programme on uranium fuel alone. She has therefore to utilise the plutonium obtained from Natural Uranium—fuelled reactors to produce uranium 233 by bombarding Thorium with neutrons from plutonium fission. Uranium—233 thus produced can replace Plutonium in subsequent places of breeding.

The Plutonium plant at Trombay will be of great value for this purpose.

Plutonium thus produced can however be used, as has been done in the bomb producing countries for the manufacture of nuclear weapons.

It is not India's intention to put it to such purpose. But her ability to do so will provide a warning to those who may be minded to intimidate her with their Nuclear power and make them desist from provoking her into forgetting or altering her noble purpose.

Welding Research: Spot Welding electrodes. Considerable research is necessary to produce indigenous brands of electrodes to save foreign exchange. It is gratifying to note that considerable activity is going on for this purpose in the Integral Coach Factory, Madras, and that publication is given to the same in the Indian Railway Technical Bulletin. We publish in this issue an extract from the May 1963 issue of the above publication to draw attention to the same.