

This Complex which is under establishment at Hyderabad is designed to meet the requirements of fuel elements for the natural uranium, heavy water moderated and cooled nuclear power reactors under construction and those planned. The Complex will consist of the following constituent units:

1. Uranium Oxide Plant - This plant will initially have a capacity to produce 125 tonnes of  $UO_2$  per year, starting with the uranium concentrates produced by the Uranium Corporation of India, Jaduguda.
2. Ceramic Fuel Fabrication Plant - In this plant,  $UO_2$  will be made into sintered pellets and the pellets 'canned' in zircaloy. The initial capacity of the plant will be 100 tonnes of finished fuel elements per year, expressed in terms of contained  $UO_2$ .
3. Zirconium Plant - Zircaloy, an alloy of zirconium, forms the 'canning' and structural material for the type of reactors under construction. This plant will process Indian zircon into nuclear grade zirconium oxide, convert the oxide into zirconium sponge which will be subsequently fabricated into zirconium alloy tubing and shapes as required for fuel element cladding and for other core components. The plant will initially have a capacity of 50 tonnes of finished zircaloy products per year.
4. Common Facilities for the Nuclear Fuel Complex - In order to achieve maximum possible economy, a common facility to cater to the various service needs of the different plants in the Nuclear Fuel Complex is being put up. The facilities to be provided will inter alia include a Control laboratory, workshop stores, power watersupply, canteen etc. These facilities are expected to cost Rs. 1.05 crores.

DEPARTMENT O-F ATOMIC ENERGY

Statement showing the outlays required in the New Fourth Plan (1969-74) in respect of projects under the Scheme 'Development of atomic minerals and setting up of industrial plants required to support the atomic power programme' - Sector - Industries and Minerals.

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of Project ..... Estimated cost ..... Expend. to end of March '68 ..... Estimated Expend. during 1968-69 ..... Balance to Government ..... Allocation IV Plan ..... required in V Plan ..... Target date for completion .....  
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( Rupees in Lakhs )

Sanctioned Projects:

uranium Oxide Plant 125 tonnes)	152.00	5.00	50.00	77.00	77.00	...	1970
ceramic Fuel Fabrication Plant (100 tonnes)	189.00	8.56	65.00	115.44	115.44	...	1970
Argonium Plant 50 tonnes)	632.00	73.64	200.00	358.36	358.36	...	1970
Common Facilities for Complex at Hyderabad	105.00	15.00	55.00	35.00	35.00	...	1969
enriched Uranium Oxide Plant	72.00	...	10.00	62.00	62.00	...	1970
enriched Uranium Oxide Fuel Fabrication Plant	125.00	...	25.00	100.00	100.00	...	1970
ousing for Nuclear Fuel Complex	265.00	...	65.00	200.00	200.00	...	...
Heavy Water Plant ( 100 tonnes)	1470.00	0.69	200.00	1260.31	1269.31	...	1972
Power Reactor Fuel Reprocessing Plant	564.00	7.00	75.00	482.00	482.00	...	1971

Category	Estimated cost	Expdr. to end of March '68	Estimated expdr. during 1968-69	Balance to Cover	Allocation required in IV Plan	Allocation required in V Plan	Target date for completion
Fission Products Fixation Plant	89.87	...	10.30	79.57	79.57	...	1970
Storage facilities for	30.00	...	3.00	27.00	27.00	...	1970
<b>Total : A :</b>				<b>2805.68</b>	<b>2805.68</b>	<b>...</b>	

(Figures in Rs. lakhs)

Name of the Project	Estimated cost	Expenditure to end of March 1969	Estimated Expenditure during 1968-69	Balance to cover	Allocation required during	
					Fourth Plan	Fifth Plan
<b>New Projects</b>						
Special Materials Plant	40.00	..	5.00	35.00	35.00	..
Inversification of Zircaloy Plant (for production of seamless tubes etc)	200.00	..	1.00	199.00	150.00	50.00
Pilot plants/Plants for production of niobium, titanium, nitric acid, etc.	200.00	..	..	200.00	150.00	50.00
Uranium Oxide Plant (Expansion) (300 ~ 350 tonnes)	60.00	..	..	60.00	10.00	50.00
Ceramic Fuel Fabrication Plant (Expansion) (300 tonnes)	50.00	..	..	50.00	10.00	40.00
Zirconium Plant (Expansion) (75 tonnes)	75.00	..	..	75.00	10.00	65.00
Enriched Uranium Oxide Plant (Expansion)	25.00	..	..	25.00	..	25.00
Enriched Uranium Oxide Fuel Fabrication Plant (Expansion)	10.00	..	..	10.00	..	10.00
Heavy Water Plant (100 tonnes)	1500.00	..	..	1500.00	500.00	1000.00
Plutonium Fuel Fabrication Facility (For Fast Reactor at Madras)	200.00	..	..	200.00	..	200.00
<b>Total : A</b>				<u>2354.00</u>	<u>865.00</u>	<u>1490.00</u>
<b>Total : B</b>				<u>5159.68</u>	<u>3670.68</u>	<u>1490.00</u>
<b>Grand Total A + B</b>				52.00 crores	37.00 Cr's.	15.00 crores