same experts. It appeared that in the large sizes the construction costs were all comparable, showing only small differences that may not be significant. A larger difference arose from fuel fabrication costs. The results are summarized as follows.

UNIT POWER COSTS FOR LARGE GENERATING STATIONS

Coolant	Reactors No.	Electrical Power/mw.	Capital Cost $/kw.	Capital Cost mill/kwh.	Fuel mill/kwh.	Operating mill/kwh.	Total mill/kwh.
D_2O	1	x 203	383	3.56	0.9	1.0	5.46
	2	x 203	344	3.19	0.9	0.8	4.89
	3	x 203	331	3.07	0.9	0.7	4.67
	1	x 457	252	2.34	0.82	0.73	3.89
	2	x 457	236	2.19	0.82	0.60	3.61
	3	x 457	231	2.14	0.82	0.56	3.52
	4	x 457	228	2.12	0.82	0.54	3.48
	1	x 750	222	2.06	0.71	0.56	3.33
	2	x 750	203	1.88	0.71	0.49	3.08
H_2O Fog	1	x 454	251.9	2.34	0.88	0.70	3.92
Boiling H_2O	1	x 457	257	2.39	0.71	0.70	3.80
Organic	1	x 457	234.3	2.18	0.44	0.86	3.48

Operating experience from NPD has been very satisfactory. Not only has there been no fuel failure, but the reactivity has been slightly higher than expected with some fuel now in the reactor over 5,000 mw.d/tonne U and the average 1,900 mw.d/tonne U (megawatt-days of heat per 1,000 kilograms of uranium). Heavy water losses have not proved excessive and have been reduced already to less than 6 lb./day. An availability of 90 p.c. or more appears a reasonable long-term prospect. On-power fuel changing is now routine and more than 60 fuel bundles have been so changed. In the NRX and NRU reactors at Chalk River, experience with defective fuel has been deliberately sought in fuel at ratings higher than required in the power reactors. Satisfactory techniques have been established for locating a defective element and for cleaning up the released radioactive fission products from the coolant system.

Section 3.—Space Research in Canada*

During 1963 there was a steady increase in Canadian space activities. The interests of Canadian scientists continue to be mainly in the field of aeronomy with particular, though not exclusive, emphasis on the high-latitude atmospheric and magnetospheric phenomena which are now generally believed to be related to the various disturbances on the sun. Canada, with its large land mass extending on both sides of the auroral zone, is ideally located for studies of medium- and high-latitude atmospheric phenomena and Canadian scientists have long been active in this exciting field. While many of the older programs of ground-based observations are still of great importance and are being carried out, the new measurements from satellites and rockets are making a significant contribution to knowledge of solar-terrestrial relations and in the next few years the importance of these studies using the new space techniques will increase.

The satellite program of the Defence Research Board, carried on in collaboration with the United States National Aeronautics and Space Administration (NASA), continues to form a major part of the Canadian space activities. The Canadian satellite 1962 Beta

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