Heavy Water Board (HWB), a constituent unit of Industries and Minerals Sector under Department of Atomic Energy, is primarily responsible for production of Heavy Water (Deuterium Oxide-D2O) which is used as a 'moderator' and 'Coolant' in the nuclear power as well as research reactors. HWB has mastered the complex production technology using two chemical exchange processes viz. H2S-H2O bithermal process and NH3-H2 monothermal process.The plants based on Ammonia-Hydrogen (NH3-H2) exchange process are linked to the ammonia fertilizer plants for synthesis gas feed supply while H2S-H2O based plants are independent in this respect.

HWB is successfully operating six Heavy Water Plants in the country. A technology demonstration plant using Water- Ammonia (H2O-NH3) deuterium exchange to make the ammonia based Heavy Water Plants independent of fertilizer plants is also developed and demonstrated at HWP, Baroda, Gujrat. Heavy Water Board and its Plants are ISO Certified for Quality Management System, Environment Management System and Occupational Health & Safety Management System.Heavy Water Product from HWB meets stringent quality specifications for international requirements. Heavy Water Board has successfully exported Heavy Water to countries viz. South Korea, China and USA. HWB has set up production facilities for various Organophosphorous solvents viz. D2EHPA, TBP, TAPO, TOPO, DNPPA, DOHA etc. for meeting the requirements of DAE. This included development of the processes from laboratory synthesis through scale up to commercially viable plants. The solvents produced by HWB have found acceptability not only in DAE but outside as well.

HWB also has been successful in engineering / setting up and operating the boron isotope enrichment units based on different technologies to meet the requirements of fast breeder reactor programme. The other activities also include development of cryogenic process system and recovery of rare material from secondary sources.

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