Design and detailing of civil buildings of AHWR

The 300 MWe Advanced Heavy Water Reactor unit will be constructed in an area of 20 ha. The main plant contains reactor building, control building, supplementary control building, service building, turbine building, station auxiliary buildings A&B, fuel building, waste management building, DG buildings, switchyard, fire water reservoir, emergency water reservoir, work-shop, ware house, desalination plant, condenser cooling water & service water pump-houses, water intake and discharge structures, administrative buildings, stack & radiation monitoring rooms etc. The various building envisaged for AHWR and its functions are listed in **Table 1**.

Table 1: Various buildings and their functions envisaged for AHWR

Building	Function
Reactor building	To enclose reactor and associated process and safety related systems and to act as barrier to radioactivity release under normal and postulated accidental conditions.
Control building	To operate the nuclear power plant safely in all operational states or to bring back to such state in case of deviation from safe state.
Backup Control building	To place and maintain reactor in safe shutdown state in case of loss of ability to perform the essential safety functions in main control building.
Service Building	To provide nuclear and conventional service facilities to power station complex and house reactor auxiliary systems including purification systems and radioactive waste storage.
Station auxiliary building	Centre for distribution of emergency electrical power to plant utilities.
DG Buildings	To house diesel generators for supply of Class III power under failure of class IV power during normal and accidental conditions.
Turbine building	To accommodate turbine generator, condenser and associated steam and feed cycle equipment required for generation of electricity from steam cycle of the plant.
Fuel building	To accommodate facilities for transfer of fuel from RB to fuel storage and storage of new and spent fuel assemblies.

Building	Function
Waste management plant	To accommodate features required for segregation, collection, treatment, conditioning, storage and safe disposal of liquid and solid radioactive disposable waste.
Desalination plant	To produce desalinated water required for different processes and systems of the plant and site.
Administrative building and nuclear training centre	To accommodate facilities for administrative and plant managerial services for regular operation and maintenance of the plant and facilities required for training and qualification of operating staff.