

**General Electric Systems Technology Manual**

**Chapter 1.6**

**Plant Layout**



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## **1.6 PLANT LAYOUT**

Most modern BWR facilities are multiple-unit plants. Greater economy can be realized with this arrangement by sharing certain functions within the facility. The principal buildings and structures associated with each unit of a particular site include a containment building (reactor building), a turbine building, a common control building, a diesel generator building, a common radwaste building, a common intake structure, and natural (or forced) draft cooling towers. Common structures are also provided which house the administrative offices, maintenance shop, controlled area access/security building and simulator/training building. Location and orientation of typical buildings for the Brown's Ferry site are shown in Figure 1.6-1.

### **1.6.1 Containment Buildings**

Boiling water reactors use multi-barrier pressure suppression type containments, consisting of a primary and a secondary containment.

The primary containment consists of two structures; the drywell which encloses the reactor vessel and the pressure suppression chamber, which stores a large volume of water. The connecting vent system between the drywell and suppression chamber is also considered part of the primary containment. The primary containment's function is to contain the energy and radioactivity released during a Loss Of Coolant Accident (LOCA).

The secondary containment or reactor building surrounds the drywell and pressure suppression chamber. It forms a second barrier around the reactor vessel to further impede the release of radioactivity. The reactor building also houses the necessary reactor support systems and the Emergency Core Cooling Systems (ECCSs).

### **1.6.2 Turbine Building**

The turbine building houses the turbine generator, auxiliary systems and balance of plant equipment.

### **1.6.3 Control Building**

The control building is generally a multistoried structure which houses; the Main Control Room (MCR) plus control and electrical systems required for safe operation of the plant.

### **1.6.4 Diesel Generator Building**

The diesel generator building contains the Emergency Diesel Generators (EDGs) and their associated equipment in individual rooms within the diesel building.

### **1.6.5 Radwaste Building**

The radwaste building houses various systems provided to process liquid, solid, and gaseous radioactive wastes generated by the plant.

### **1.6.6 Intake Structure**

The intake structure houses the equipment that provides the main heat sink for the plant and other auxiliary cooling water systems.

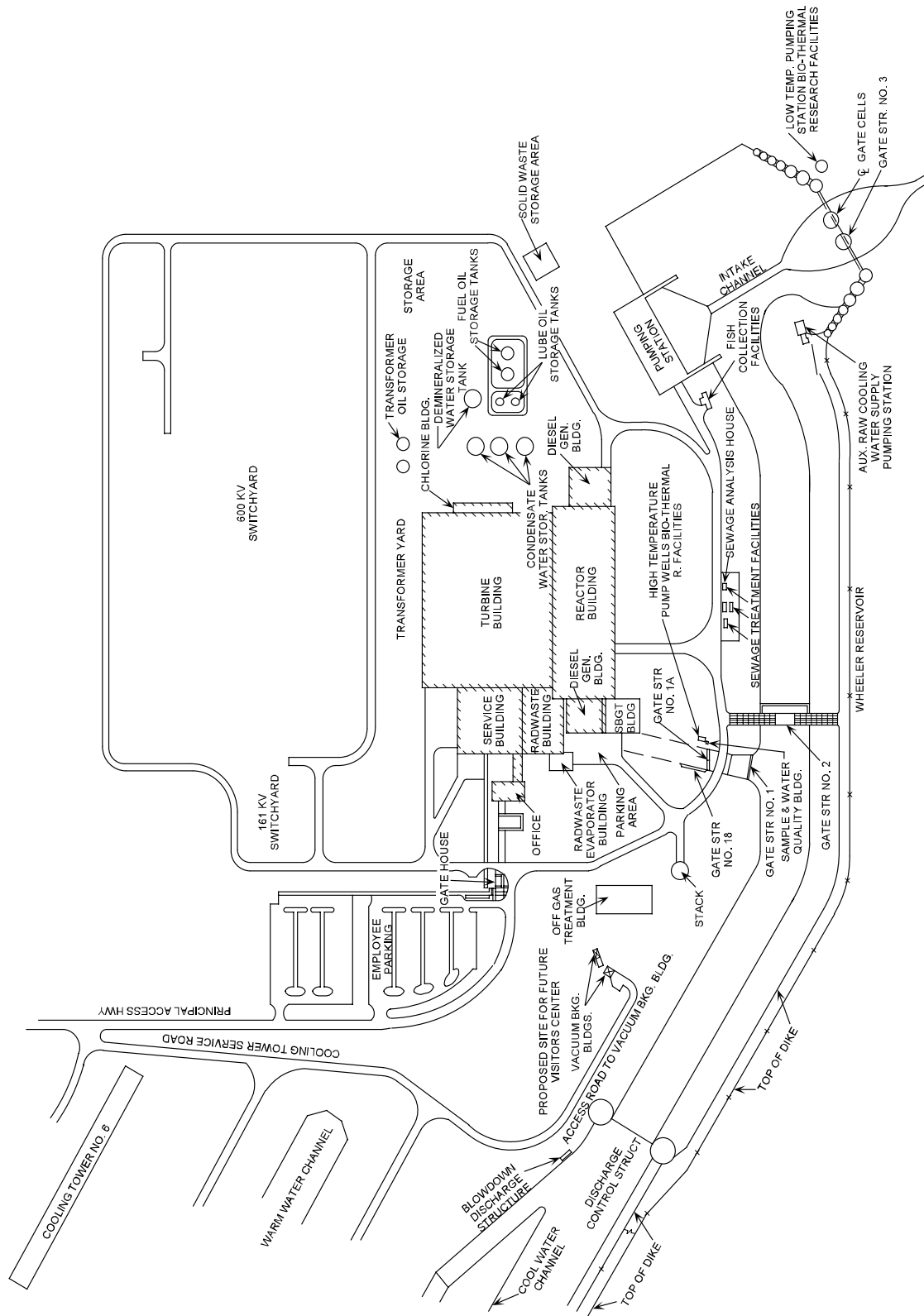


Figure 1.6-1 Site Plan and Building Arrangement