

PLANT LOCATION AND LAYOUT

Before any site selection work begins the company should be organized for expansion planning in a way that depends on the size of the firm. A company may want to utilize a standing committee, a special project team or planning by one person. In any event the planning function must be clear cut responsibility of one individual.

SITE SELECTION FACTORS:

1. Markets
2. Work force
3. Unionization
4. Transportation
5. Energy
6. Business climate
7. Water and waste systems
8. Living conditions
9. Topography

The basic aim of the site selector is to choose a location that maximizes income and minimizes cost compromises usually have to be made. No site is ever perfect, and it is the mission of the site selection team to weigh the alternatives and compromises on the best choice.

PLANT LAYOUT

Plant layout involves developing physical equipment for a processing facility. The development must effect a balance of equipment spacing and integration of specific systems related to facility as a whole. Some of the factors to be considered for designing the plant layout are:

1. Process

2. Economics
3. Client requirements
4. Operation
5. Erection and maintenance
6. Safety
7. Environment
8. Appearance
9. Expansion

In-line plant layouts are made in various arrangements which often are referred to by letter designation. Various configurations are formed based on the main artery of the process unit i.e. the pipe rack, which contains long process and the utility lines that connect distant equipment and product piping entering and leaving the plant. Space for instrument and electrical feeders is allocated in the pipe rack such that they are connected to the related equipment. This area is kept free of piping and its related supports. Generally an I shaped plot is used for small process and an H-shape plot for larger units.

In developing the plant layout for a chemical plant, it is essential that the firm decisions are made early as to equipments arrangement. This eliminates changes, which cost man-hours as the job progresses through engineering and design. The distillation sections are based on a grade-level process plant layout configuration. The steam generation and power facilities are housed in a building. The basic arrangement follows the equipment spacing charts and clearance tables