6.3.2. Pump Performance Curve and Duty Point

The pump duty point shall be used when considering the suitability of alternative pumps for a particular duty by comparing the efficiency and power requirements for each pump at the duty point. Typical pump performance curves are illustrated in Figure 6-1.

In multiple pump installations, it is essential that the operating conditions of a single pump running are carefully checked to ensure that the pump will operate satisfactorily.

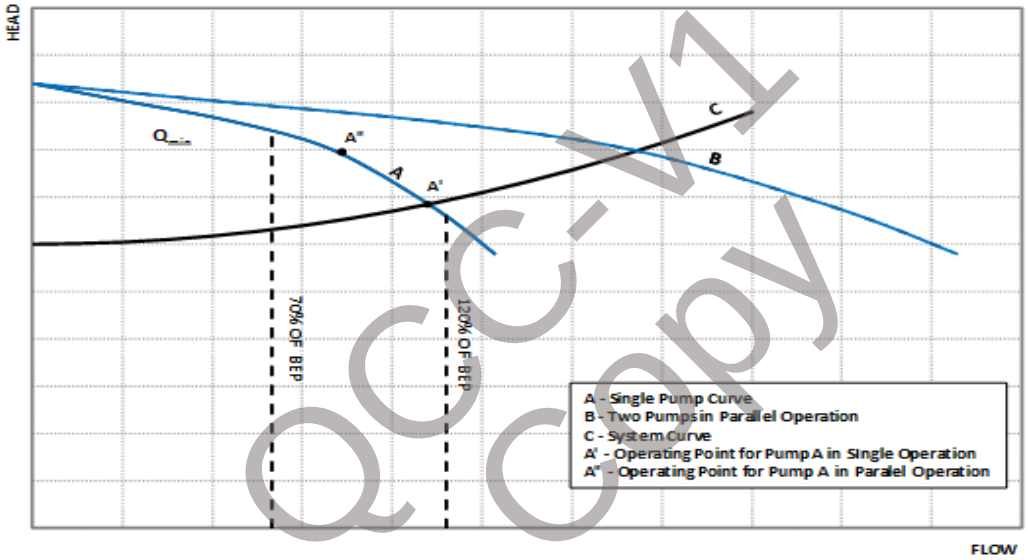

Figure 6-1 - Pumping System Characteristics

Pump design flow rates shall be determined from the range of working requirements with an additional allowance of 10% at maximum design flow.

The pump performance characteristic shall be:

- stable at all flow rates between closed valve and open valve
- steep enough to permit satisfactory operation in parallel with other pumps

6.3.3. Pump Selection

As part of the pump selection process the Consultant shall consider the following:

- Quality of the fluid to be pumped,
- Required design capacity and available storage (initial minimum, average and maximum flow rates), and
- Operating conditions (best/ worst case system head curves, maximum/ minimum flows, submergence, NPSH, etc.).
- Number of pumps
- Mode of operation,
- Inlet configuration,
- Type of driver (C/S or V/S),
- Location of the pumping station, configuration and constraints (pump number, parallel operation, etc.), and
- Miscellanies Considerations.