P-Glossary

Energy Conservation

Energy Conservation is a series of activities/programs, designed to prevent, mitigate and correct energy leaks or loss throughout an organization. These activities include among others: i) Energy Conversion: avoiding energy loss during energy transfer operation, ii) Transfer: reducing unwanted energy transfer (e.g. irradiated heart) or re-designing to benefit from energy transfer (e.g. steam recovery), iii) Energy Utilization: improving the efficiency with which energy is used and how it should be used, and iv) Energy Recovery: using energy from waste streams (potential or actual) to feed other processes.

Energy conservation at a facility or during a process is possible in the following ways. First, in energy conversion, the focus is on the efficiency of industrial boilers, power reactors, etc., that convert fuel to steam or fuel to electricity. Second, when energy is transferred from the point where it is generated to the point where it is used, there may be losses. The energy transfer efficiency of the energy conduits and steam piping can contribute significantly to reduce losses during energy transfer. Third, energy utilization refers to the actual end use of energy in a process. The individual equipment efficiency in terms of unit product output per unit of energy utilized is the focus. Fourth, energy can be effectively recovered and recycled back to processes. Sometimes, hot effluents are discharged to treatment plants. If heat exchangers are employed to draw off the excess heat in the effluent, it can be used in the process again. Sometimes, the material in waste or by-products has high calorific value and can be used as a secondary energy source.