MINOR PUMPS FOR DESALINATION PLANTS

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Contents

1. Introduction

Several pumps in the desalination plants are present whose power does not generally exceed the threshold value of 20 kW.

These utilities include:

- Sampling pumps
- Sump pumps
- Ejector condensate pumps
- Clean drain transfer pumps
- Chemical dosing pumps

Despite the chemical dosing, pumps are utilities that consume very low power, their importance in the process is very high and therefore they will be treated separately in Chapter Chemical Dosing Stations which is dedicated to the chemical dosing stations.

In this chapter, the duty of every pump in the process as well as the typical specification will be discussed.

2. Sampling Pumps

The oxygen content in the deaerator is monitored generally continuously and indication and recording is provided in the desalination control board located in the central control room.

In fact, the danger of corrosion is very high when the oxygen in the make up feed is above 20 parts per billion (ppb) in the brine recirculation circuit and must be prevented.

For this reason, the oxygen analyzer is continuously fed by a sampling pump whose

suction is on the deaerator and whose delivery is monitored by the cabinet of analysis.

Due to the very low NPSH available and the flow rate required (in general, not higher than 0.5 l min^{-1}) the pump most suitable to the purpose is not of a centrifugal type, but rather of a meter type with pulsation damper.

Similar pumps are provided for distillate samples extraction, as well as for brine blowdown conductivity analysis, in case the pressure in the delivery line is not sufficient.

The choice of the material is strictly related to the fluid handled in the process. For the oxygen analyzer pump, the handled fluid being deaerated seawater, the adoption of stainless steel is appropriate, this choice can also be applied to the distillate sampling pump.

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