



NOANDISHAN ARYA
PROCESS & ENERGY ENG. CO

Noandishan Arya Process & Energy Eng. Co.

Unit 6, No. 35, 2nd Lane, Shah Nazari St., Mohseni Sq., Mirdamad Blvd., Tehran 1547936515, Iran
Tel +98-21-22250133
Fax +98-21-22254061

www.napeec.com



ISO 9001 : 2008
10-Q-20271-TIC

DEAERATION

NAPEEC (Noandishan Arya Process and Energy Engineering company) designs, constructs and supplies Thermal and vacuum deaerators based on the thermodynamical Spray & Tray process.

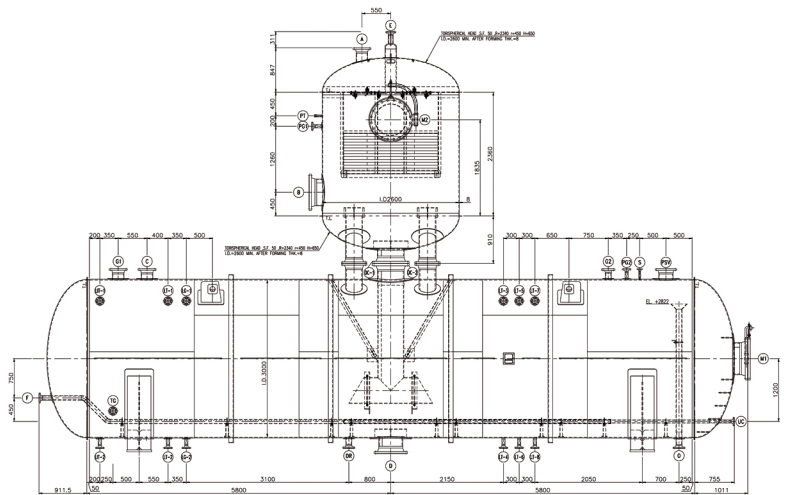
NAPEEC is experienced in the deaeration process both in vacuum and in pressure conditions, with stripping steam either self generated by flash and supplied by external sources.

The efficiency of the process arrangement enhance NAPEEC's flexibility and competitiveness.

The quality standards of NAPEEC thermal deaerators are in compliance with the most severe requisitions of the Power Industry.

The expertise of NAPEEC includes condensate, make-up demineralized water and sea water to be deaerated in a large range of production rates from 5t/h up over 1000t/h.

The design of NAPEEC Thermal Deaerators is based on well proven proprietary equipment, such as spraying valves and deaerating trays, adequate to ensure a final oxygen content according to the requirements of each project, up to 0,005 ppm.



Our engineers are available to assist NAPEEC'S customers in the selection of the most convenient process scheme, selection of materials and operating conditions for the most effective deaeration performance

The excellent design of the spraying valves and trays and of their combination in an effective arrangement ensures the requested performances with the most reliable and compact equipment.



First Stage of Vacuum Deaerator Tower
Spray Valve and Packing Bed

Vacuum Deaerator Package of Binak Desalting Plant

NAPEEC designs Vacuum deaerators as vertical columns divided in two sections

- The upper section works as a single stage where approx 80% of oxygen is stripped by vacuum
- The lower section works as a distillation multistage column for the removal of the largest part of the residual 20% of oxygen

The upper part is equipped with water sprayers (valves with springs) adequate to ensure the effective distribution of water. NAPEEC valves mod. SW.3 are typically installed with a capacity of 20-25 m³/h for each valve.

The sprayed water flows through a bed of pall rings adequate to ensure a thin and large film of water for the easier deadsorption of O₂ (in spite of the slow O₂ diffusion velocity inside the water bulk).

The lower section is equipped with deaeration trays. The NAPEEC trays mod. WTA and WTA-PLUS have been proven to be quite efficient for the deaeration service, even if arranged in very compact packs. The installation of these trays reduces the height of the column quite remarkably.



NAPEEC supplies are completed with extensive manuals for erection, operation and maintenance. The NAPEEC calculation and test procedures fit all the international and most national applicable codes such as ASME - NACE - BS - HEI.

Thermal Deaerator Mansouri Oil Field