

Introduction

Howden Netherlands [HNL] is a manufacturer of industrial low pressure axial cooling fans. These fans are mainly used in air-cooled condensers, air cooled heat exchangers and cooling towers to provide cooling for power plants and (petro) chemical industries. These fans typically have a life expectancy of 10-15 years.

EU 327 dictates that from 2015 onward all replacement fans should comply with the efficiency guidelines of EU 327. For some of our customers this could lead to significant problems with regard to their daily operation.

Air cooled condenser (ACC) fans

Typically air-cooled condensers are equipped with a large number of identical fans with a diameter of 28-38ft (8 -12 meters). ACC's with 20-60 fans are not uncommon and ACC's with over 100 fans (especially at larger power plants) also occur.

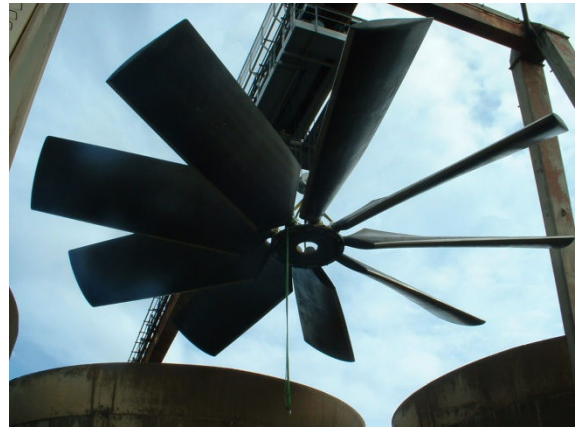


Centrale IREN di Torino Nord, Italy: 16 identical 9,144 meter diameter fans

Customers running a power plant want to be able to replace individual fans by identical replacements to keep the fans in their ACC identical. This is because operating varying fan types usually also means variations in required parts (bolts, hub plates, pulleys, gear boxes etc.). There are often also severe time constraints with regard to fan replacements on power plants and chemical plants; typically such activities can only be done during planned plant stops. One cannot simply shut down a fan on a power plant or chemical plant because this would lead to a reduction of or disruption of power output or a disruption of production.

Nuclear plants

Certifying a cooling fan for use in a nuclear facility is a very time consuming and intensive process. Customers operating such facilities are understandably very conservative with regard to replacements of fans. These customers will typically demand their fans to be replaced by the exact same fan type and are extremely reluctant to even the smallest of design changes because this would mean that the fan would have to be recertified. To this day some of these customers are still ordering fan types that have been taken out of the standard HNL delivery program for over a decade.



EDF Chinon, France: 4 x 18 = 72 identical 12,4 meter diameter fans (Motor power 391 kW)

HNL view

It is the view of HNL that, for certain industries, being able to replace a fan with an identical replacement fan is of high importance. EU regulation 327 should provide an exemption for these types of applications where other factors (such as safety) outweigh the importance of a (usually relatively small) increase in fan efficiency.