

## ANTI-ICE SYSTEMS:

We have experience with deliveries of several types of Anti-Ice system for gas turbine air inlet systems:

- Compressor Bleed as anti-ice media.  
The system taps bleed air off the 16<sup>th</sup> stage bleed ports on the compressor portion of the gas turbine.



3d model of a compressor bleed anti-ice for Sleipner A

- Ventilation outlet air as anti-ice medium.  
The ventilation outlet air is recirculated in to the front of the filter house.  
The pre heated air, recirculated from the gas turbine noise hood ventilation outlet is mixed together with the primary air in front of the filter house.



Visund – modification on the ventilation and anti-ice system

- Radiator - liquid media in heat exchanger.  
Some platforms have “hot media” available. The “hot media” are driven through a heat exchanger located in front of the filter house or in the primary air inlet stream.



**Radiator - liquid media in heat exchanger for Sleipner T.**

- Electrical heaters.  
As radiator, but the “hot media” are replaced with electrical heater elements inside the tubing.
- Primary exhaust re-circulated to inlet system.  
This is one of the earliest used systems. The primary exhaust gas is warm and cheap. The exhaust gas is “tapped off” the exhaust system and inserted directly into the primary air intake.
- Using primary exhaust air as the heating media for anti-ice air.  
This is a variation on the direct exhaust gas re-circulation by using only the hot gas to heat the media via a “heat exchanger”.