



# ***APEX Industrial Gas Services***

*Accelerated reactor cooldown*

- *Economic flexible nitrogen supply*
- *Significantly reduces reactor cooldown time*
- *Reduces production losses*
- *Ambient purge for inert entry*

## ***APEX Industrial Gas Services***

### ***Accelerated reactor cooldown***

#### ***Economic, flexible, nitrogen supply***

During catalytic reactor turnarounds, reactor wall and catalyst bed cooling to ambient temperatures (below 50°C) is needed before catalyst handling and maintenance work can occur. When extended time periods are required for reactor cooling, production losses incurred by major units can be substantial. Even for smaller capacity units, the cost of lost production can be significant.

Air Products has developed methods for using liquid and gaseous nitrogen to accelerate cooling of catalytic reactors, minimising costs associated with turnarounds. With APEX Industrial Gas Services, quick response to your planned or unplanned cooldown needs can be provided through the use of mobile nitrogen equipment.

#### ***Safety of personnel and equipment are ensured***

In all cooling applications using APEX Industrial Gas Services, a full review of reactor design and location is undertaken. APEX will optimize and monitor the cooling rate to protect the reactor against costly thermal or pressure damage.

All APEX equipment is supplied with inbuilt automatic safety trips for pressure, flow and temperature. APEX also maintain operation safety during product delivery and all vehicle movements are controlled using anti-towaway devices.

#### ***Operational control is maximised***

Throughout cooldown operations, APEX will monitor and record pressure, temperature and flow rates. This enables the client to view real time information at any time during the entire procedure.

#### ***Why APEX industrial gas services***

The APEX team has a unique position in the industry. With over 35 years' experience in nitrogen-related services, not only can it offer a wide range of nitrogen pressure and

temperature supply options, but as part of Air Products it has secure product supply capability from a large network of industrial gas plants located around Europe.

#### ***24 Hour call-out service***

APEX Industrial Gas Services offers emergency nitrogen services. APEX staff are available on call 24 hours a day and their knowledge and experience in dealing in various

chemical and process industry applications enables them to mobilise the right equipment, labour and product supplies at short notice.



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