The P.R.I.C.E.
Benefits of On-Site Nitrogen
If your business is a regular consumer of nitrogen, you’re likely (and perhaps even painfully) aware of what a hassle nitrogen-tank rental and delivery can present. Those bulky nitrogen cylinders take up a lot of floor space in your facility, and being such heavy vessels containing gas under high pressure, they amount to an ever-present safety risk. Further, the rental/delivery service can be very expensive, tank replacement regularly leads to downtime and added labor costs, the gas company’s strict contracts can be a challenge to get out of … and the list goes on.

If any of the issues mentioned above sound familiar to you, you’re not alone. Like many business owners and workers in similar situations have already done, it may be time for you to consider on-site nitrogen generation.

The good news about generating on-site nitrogen is that if you already have an air compressor, you’re halfway there. All you need is a connected nitrogen generator unit to generate your own nitrogen in-house. There are two main types of on-site nitrogen generators: PSA (Pressure Swing Adsorption) and Membrane. Both work in very different ways, but let’s not explore which is right for you just yet – let’s focus on the benefits of on-site nitrogen generation.

Introduction

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When a business implements on-site nitrogen generation, the reductions it can realize include:

- **Reduced downtime:** Because a nitrogen generator is constantly available and its tank is always being refilled, there's no need to switch out cylinders, resulting in downtime reductions.

- **Reduced labor:** On the same note as the item above, because the need to switch out tanks regularly is eliminated, the labor costs involved in doing so are also eliminated.

- **Reduced injuries:** Since there is no longer a need to switch out and move the heavy nitrogen cylinders, the risk of injuries is greatly reduced.

- **Reduced need for storage space:** With just a single tank on-site that is constantly being refilled, there's no longer any need to store extra tanks in the facility, freeing up valuable space for other purposes.

- **Reduced waste:** Because on-site generation can produce nitrogen at exactly the needed pressure and flow rate, no gas is bled off in effort to get the gas to these required levels. Also, with cylinder-rental services, the tanks are often returned with some gas left in them — which can add up to large amounts of wastage over time, especially for businesses that utilize nitrogen in high quantities. Further, when a tank is not being used for long stretches of time, the pressure builds — creating a need for the relief valve to bleed off nitrogen gas, wasting a costly (and already paid-for) resource in the process.

Typical nitrogen-delivery services utilize cylinders that weigh over 100 pounds and that are filled with gas under high pressure — so it's not hard to imagine why safety directors can't help but see a recipe for a highly dangerous projectile, especially should a valve be broken off. Further, when nitrogen is delivered in liquid form, a high risk for burns can exist.

When nitrogen gas is produced on-site, the risks of both burns and projectiles is greatly decreased, as the holding tank for the nitrogen is stationary — largely eliminating the risks involved with moving the cylinders from place to place.

On-site nitrogen generation can produce cost savings in a number of ways, leading to an increase in ROI for business owners. The most obvious example is that generating nitrogen allows business owners to eliminate rental fees on cylinders. These can add up, as most shops generally have three rented cylinders in-house — one in use, another empty tank awaiting pickup, and a third one full and waiting to be rotated into use. With on-site generation, of course, just one owned cylinder is needed on-site, and it's constantly being refilled.

Next, when cylinders are rented, there will inevitably be cases when the tanks are returned with unused nitrogen remaining inside — representing waste losses in gas that was paid for but never used. Another consideration, as mentioned above, is that cost savings can be realized when nitrogen of lower purity levels is used for applications with higher levels of oxygen tolerance. More opportunities for cost savings include avoiding any combination of the following: the uncontrollable price increases that can come with purchased gas, avoiding costly contract negotiations, eliminating or reducing hazardous material fees, avoiding delivery surcharges, and reducing the amounts of local and state taxes paid.
Efficiency/Environment

On-site production creates efficiencies and environmental benefits by effectively eliminating both the production and delivery phases needed for each delivered cylinder, as it eliminates the need to burn energy in converting nitrogen gas to liquid, and it reduces the carbon dioxide emissions generated by delivery vehicles. In addition, by avoiding the return of partially filled tanks, as well as any necessary gas bleed-off/venting before tank return, on-site nitrogen generation reduces waste right at the facility.

If you’re still having nitrogen cylinders delivered to your business — and especially if you’re a heavy nitrogen consumer who sees regular tank drop-offs/pickups at your facility — it may be time to consider all the P.R.I.C.E. related benefits that on-site nitrogen generation can bring. For many businesses, the ROI reaped from on-site generation can cover the initial equipment investment very quickly, all while introducing a range of benefits and conveniences.

To learn more about generating nitrogen on-site at your facility — while both saving money and reducing downtime — visit www.atlascopco.com or call Atlas Copco at 866-546-3588. We offer a range of reliable gas generators that can efficiently and effectively meet all of your nitrogen and oxygen on-site production needs.

P.R.I.C.E. Benefits Summary:

- **Purity Control**
  Set the purity level that you need and only pay for that purity.

- **Reduce Wastage**
  You use every drop you produce. Nothing gets sent back.

- **Increase Safety**
  No delivery, storage or movement of high-pressure cylinders.

- **Cost savings**
  Monthly investment cost is the same or less than buying bottles. Payback is often two years or less.*

- **Environment**
  No reportable transportation to your site. No need to bleed-off/vent tanks before returning.

*payback period is subject to a complete system analysis.