

# Adventures in Finding Helium...

A case study in Frustration...

(Apologies to non US members in attendance)

# Helium Stewardship Act 203

- President Signed into Law on 10/2/2014
- Extends the current operation (since 1996 under Clinton administration Privatization act) for one more year.
- The Problem isn't fixed... simply postponed until next year...
  - ACS Govn't Relations Lobbyist: Ryan Davison was talking to a congressional aid about the helium problem... "There is no helium problem any more, we passed the bill in September."
- Big 3 Vendors with direct access to helium for liquifcation and distribution: Praxaire, Linde (Formerly B.O.C. Gasses), and Air Products & Chemicals.
- Other Vendors like General Air, Air Gas, U.S. Welding, Matheson-Linweld, ...etc. have to get their liquid from one of these other three vendors (re-distributors).
- In Boulder (at CU Boulder) we use Air Gas.

# My Story

- Prior to passing the helium bill, shortages began to pop up in different ways in different places.
  - Air Gas reported “no guarantee” of Liq. He from Sept. 1 on because of Air Products “preparing” for a shut down if the bill didn’t pass... we had several 1-2 week delays in delivery even as early as August... so we re-adjusted our ordering schedule... order early.
- Given the “All Clear” By Air-Gas in November, one 100L tank to arrive 12/9 didn’t show. ... “No Helium for You” (Air Products to Air Gas to me)....
- 2 500s and a 400 in danger of quenching;
  - Got 36 Liters from Physics (at a very high cost)... bought me a few weeks
  - Air Gas re-routed Linde product to Boulder as an emergency measure... didn’t lose any magnets.

# What Happened?

- Gruver, TX, Hansford County Helium facility (Air Products liquifaction/distribution for SW US) was shut down for undetermined amount of time... no warning
- Other facilities (Milwaukee, Liberal KS) OK. Air Products would net divert product from other facilities to fulfill Air Gas order obligations.
  - We can't go directly to Air Products... they won't sell to us.
  - We can't go directly to Linde or Praxair (only selling to current contract customers).
- I wrote an email to AMMRL on 2/10 trying to find out who else was having trouble.
  - Most of you "no", some of you "yes" ... then things got interesting.

# Then things got interesting...

- Contacted by Jodi Lieberman, Government relations for the APS. OK, I'm a member of the ACS, but I'm all ears.
  - Jodi asked simple questions, including "are you enrolled in the In-Kind Helium program with the BLM?".
  - I say.. What's that?
  - Spoke with Joe Peterson , Asst. Field Manager of the Amarillo TX BLM Helium Facility, and was educated about the In-Kind program (Web Link to the form).
    - For In-Kind Contract, you must use at least 200 Million CuFt (gas), or 7,510 liters, be federally funded, apply for "In-Kind" status with the BLM, then secure an In-Kind contract with one of the approved vendors (list includes Big-3 and sub-contractor vendors like Air Gas).
    - BUT, I can't do any of that on behalf of the University... it took about a month to figure out who could (Central PurchasingDept).

# After over a month....

- Good Morning Rich and Eric,
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- First, thanks for your patience in receiving this reply. I did speak with Senior Airgas management about this issue late in December per the email below. **They were able to fully discuss the nature of the in-kind program,** and the plusses and minuses of this program as it relates to the University. There was a bit of additional information they were putting together for year's end, and I wanted to take a look at that before responding.
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- In short, it appears that the current arrangement we have with Airgas is the best course to continue following. The one advantage of the in-kind program is that as long as there is helium available, a customer will receive prioritized allocation. **The downside is that if there is a supply shortage, a customer would be locked in with in-kind, and not have access to helium. Since helium resellers and distributors are locked into allocation based on historical sales, at this time it is very difficult, if not impossible, to have multiple helium suppliers to pick and choose from. So, if we went with in-kind, and there was a supply shortage, we would not be able to use Airgas as a secondary source, as Airgas would no longer have our usage as part of their available allocation. Our current Airgas contract provides the University with the best means of insuring product. Airgas is tied into all of the major helium distributors, and uses them all to service their account. This provides the University with a more stable and varied supply network than would in-kind.** Also, our pricing right now is actually better than in-kind pricing. Several years ago we entered into a contract with Airgas. This contract insured that as a research institution, we are at the top of their priority list. It also put a cap on annual price increases.
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- Please know that I appreciate you bringing this option to my attention. As we have had such a strong relationship with Airgas, I have never had to look at other options previously. I feel we are in the best position continuing with Airgas. However, with the constant uncertainty surrounding helium, this matter is certainly in no respects closed to future reconsideration, as appropriate. I will continue to monitor the in-kind model as part of constantly working to assure our critical access to helium. I would certainly appreciate your feedback.
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- Thanks again for your patience while this analysis was performed.
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- Regards,
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# What I learned...

- Things seem to be completely different from region to region, vendor to vendor, and even those working with the same vendor in different parts of the country have different experiences.
- Just because you are a Federally Funded Agency, the In-Kind program might not be the best option
  - Even if it is, lowly facility managers like me don't have the authority to enter into such a contract on behalf of our institutions (something the BLM and APS/ACD people didn't seem to get).
- People still talk about “price”, but it's becoming more urgent to know “can I get it at all?” .. For some now, for most of us this will eventually be true.

# What can we do?

- APS:
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# From Jerry Hirschinger (Purdue)

- If you use cryogenics, and LHe especially, then you need a contract with a large refiner, and the larger the contract, the better the refiners will treat you. Their largest contracts get the priority supply in lean times. Here at Purdue we have a nuclear accelerator, 10 NMR magnets, an EPR, around a half-dozen FTMS magnets, and 3 MRIs, plus a very large research campus full of other instrumentation using compressed gases. The entire campus has an exclusive supply contract with Linde for all pressurized gas cylinders and cryogenics, including rather large LN2 bulk tanks on at least 5 buildings. That makes the value of our contract large enough to avoid getting orders refused or dropped during shortages.
- The question all small LHe users need to ask is “Who are my neighbors that need large quantities of the same LN2, LHe and gas cylinders that I need small quantities of, plus any other gases and cryogenics like LOX I might not need?” The answer in many cases is the nearest hospital or better yet an area-wide hospital network. For purposes of this discussion I’ll refer to a hospital, but in other cases it might be a large automobile factory or other machine factory. In some areas it might be a cryogen/magnet service company. These large quantity users are your competition for supply during shortages, and they will always win. The key to avoiding shortages, IMO is to make them your partners instead of your competition! If I was a small quantity user, I would try to piggyback my deliveries on a larger contract. Get the hospital’s price and the hospital’s priority by establishing a partnership of sorts, whether it be through medical school contacts, research collaborators, drug trial contacts, spectral service customers, technical curriculum committee contacts, or whatever means you can to get someone at the hospital to allow you to order LHe through them and ask their purchasing office to set up billing you. This might mean that you have to go to the hospital with a pickup truck every 10 weeks to pick up a 60L transport dewar and then return it empty, but at least you’ll have a higher priority customer to ride out shortages on the back of. The increase in their annual contract value due to your added quantity will also improve the hospital’s price and priority, so that is a win-win selling point for your proposal to them.
- Many small quantity NMR users get their LHe and LN2 from a welding supply house because small-quantity, occasional users are common accounts for welding suppliers. IMO this is a bad idea. Who is the welding supply house’s best customer? The machine shop or factory who buys many other supplies in addition to cryogenics and welding gases is their priority, NOT the local state college NMR manager. In shortages, a welding house will supply their welding customers first. Also, who does the welding supply house buy their cryogenics and gases from? They buy those products from the large refiners like Linde and PraxAir, so they are marking up the price (oops, I slipped back into a budget issue.) They are a middle man, and it pays to avoid the middle man if at all possible, not only to avoid his markup, but also to avoid his decisions during a shortage.