



November 2, 2009

ADDENDUM NO. 3
TO
RFP 191001

Provide and Deliver Liquid Nitrogen to Various Locations at Arizona State University and the University of Arizona AND Replace and Maintain the Existing Distribution System on the Liquid Nitrogen Tank at Arizona State University, Lab Stores

Arizona State University is providing the following questions, answers and clarifications:

ARIZONA STATE UNIVERSITY

Ira A. Fulton School of Engineering:

1. Q: Can you take shut down during switch-out? Yes or No?
A: **No shut down is allowed if there has to be a switch-out. Last time this happened was when we went from Air Liquide to Air Products: LN2 dewars were brought in to supply continuous N2 flow to the Cleanroom facility. We would expect similar circumstance this time.**

2. Q: If yes, how long can you take shut down?
A: **See answer to question 2.**

3. Q: Are the valves needed to be stainless steel? Are brass or bronze valves acceptable?
A: **If it is the UHP (N2) system: Yes to appropriate grade of stainless. If for the possible 2nd liquid tank: purity is less critical so copper, etc. would most likely be fine.**

4. Q: How about piping? Does the piping have to be stainless steel?
A: **Piping: yes to stainless for UHP system: And not necessary if for 2nd liquid tank.**

5. Q: If not, does the stainless steel need to be welded or will compression fitting be fine?
A: **Yes to welded.**

Laboratory Stores:

1. Q: 528,494 scf/year which means 44,041 scf/month. Can you go to a smaller vessel, let's say 900 gallon vertical?
A: **Incorrect Estimate used in RFP. Should be 94,000 gallons or 8,700,000 SCF per year.**
2. Q: We have 130 psig as the pressure of the liquid, what is the requirement in pressure for the gaseous nitrogen?
A: **150 psig**
3. Q: Can you take shut down during switch-out? Yes or No?
A: **We would require advance notice, and an alternate way to provide LN2 to our customers on an emergency basis. And we would require a minimal switch-out time.**
4. Q: If yes, how long can you take shut down?
A: **Vendor to determine length of time required for switch-out, and suggest alternate ways to provide LN2 to campus community during switch-out period.**
5. Q: If no, we can provide temporary during switch-out. How long is the time for switch-out?
A: **Vendor to determine.**

Engineering Technology:

1. Q: Can you take shut down during switch-out?
A: **No, it is not an option for us at this time.**
2. Q: If yes, how long can you take shut down?
A: **We are not taking a shutdown, due to production schedule.**
3. Q: Does the system have to be all stainless steel?
A: **Yes, Stainless Steel is a requirement.**
4. Q: Is copper piping, bronze/brass valve acceptable?
A: **No, must use stainless steel throughout.**
5. Q: If not, does the stainless steel need to be welded or will compression fitting be fine?
A: **Yes, the stainless steel must be welded, no compression fittings allowed.**
6. Q: Please clarify that you want to install a vacuum indication gauge on this particular tank?
A: **Yes, there is a vacuum gauge on tank at this time and want the same on any replacement.**

UNIVERSITY OF ARIZONA

Chemistry Dept:

1. Q: 1500 gallon with evaporator, what is the pressure requirement?
A: **Our tank is labeled 120 psi, but gauge is reading 150. That's about the right range.**
2. Q: What is the rating of the vaporizer(s) you currently have?
A: **Don't know what this is. I presume this is the pressure developer, and the current external coil is not labeled in any way.**
3. Q: How does the vaporizer(s) perform for your requirement?
A: **I believe it is strictly for building enough pressure to dispense liquid. (~150 psi)**
4. Q: What is your required flow rate?
A: **N/A**
5. Q: Is there any liquid requirement or just simply gaseous requirement?
A: **Our operation is geared to liquid N₂ only. We use the cryogenic form for cooling lab apparatuses, supercooled magnets, demos, and a few other things. We DO have a small gas component; the normal tank overpressure blow-off is plumbed to Old Chemistry and is used in a couple labs there. (Mass Spectrometry and NMR) The intent of the tank, however, is strictly for liquid dewars between 4 and 180 liters in size. The gas that's plumbed to Old Chemistry is merely taking advantage of the 'free' nitrogen that would be vented off to the atmosphere anyway.**
6. Q: Can you take shut down during switch-out? Yes or No?
A: **Yes**
7. Q: If yes, how long can you take shut down?
A: **We could bear a few days to facilitate a change-over.**
8. Q: Is copper piping acceptable?
A: **Yes. The only issue we have seen with copper is some of the user fittings currently in use can get deformed if wrenches are not properly backed up. This is not a huge problem, but requires a sturdy hose stand/structure to mitigate metal fatigue.**
9. Q: If not, does the stainless steel need to be welded or will compression fitting be fine?
A: **Stainless Steel not required.**

Note: The only other concerns/interests to pass on is, this delivery absolutely needs to happen during off hours. Because the Marvel building is only a few steps from Old Main and the Mall, there is a ton of foot traffic to contend with during the day, so driving in an LN₂ semi-truck would be unsafe if filling occurred after 6am...7am at the latest.

Also, I would absolutely insist on a telemetry refill system. Our tank is refilled automatically when the tank reading gets to a preset level. The current vendor gets notice electronically that we need a refill, and they usually come the following evening, refill the tank, and leave the invoice in a locked box. This system works great in that we don't need to manually requests refills.

Optical Science:

1. Q: 1500 gallon with evaporator, what is the pressure requirement?
A: **About 30 psi**
2. Q: What is the rating of the vaporizer(s) you currently have?
A: **We use liquid nitrogen; there is no vaporizer to my knowledge.**
3. Q: How does the vaporizer(s) perform for your requirement?
A: **We use liquid nitrogen; there is no vaporizer to my knowledge.**
4. Q: What is your required flow rate?
A: **Guess 40-60 gallons/hour.**
5. Q: Is there any liquid requirement or just simply gaseous requirement?
A: **We use liquid nitrogen; there is no gaseous requirement.**
6. Q: Can you take shut down during switch-out? Yes or No?
A: **If "switch-out" means changing tanks, the answer is Yes.**
7. Q: If yes, how long can you take shut down?
A: **Three days, if scheduled; even longer if we are not in growth mode.**
8. Q: Is copper piping acceptable?
A: **OK if insulated and compatible with our line.**

General:

1. Q: Since delivery miles from a supplier's plant may be significantly different for ASU and U of A, can the two locations be quoted separately?
A: **No**
2. Q: Can each department be quoted separately?
A: **Product pricing for each department should be the same. Pricing can be quoted separately for each department for vessel rentals and the various requirements for each department as outlined per Section V – Specifications/Scope of Work.**
3. Q: Is the intention of the bid to award the Nitrogen business to one vendor for both locations?
A: **Yes**

Distribution System for Lab Stores:

1. On page 15, under the description for the 2nd part of the RFP it states: *The system is nearly 20 years old and has become unsustainable as is. Much nitrogen is wasted in the process and the system frequently breaks down.*

Goals

- *Completely replace the dispersion and control system.*
- *Reduce amount of nitrogen wasted.*
- *Obtain supplier support and routine maintenance for the system.*

Q: Could you please elaborate on the statement “Much nitrogen is wasted in the process...”?

A: Nitrogen is wasted in a few different ways. First, in the “bypass” mode in which the nitrogen is circulated back into the tank, the nitrogen goes back into the tank in gas form. According to an expert on LN2 that we had on campus for another purpose, most of this gas does not return to liquid form and is lost through the ventilation relief system in the tank.

The second way is that the piping and valves leak. Plumbers have been called in to fix this, but it is always temporary.

And thirdly, some is wasted in the process of actually dispensing into the container. We do understand that it may not be possible to change this portion, however, we included it in the RFP so that it would be taken into consideration.

REMINDER:

Time and Date set for Closing: 2:00 PM, MST on Friday, November 13, 2009

Please contact me at 480-965-3849 if you have any questions regarding this notice.

Thank you,



Karen S. Ashe, Buyer Senior
Purchasing and Business Services

file: RFP 191001