NNJ11373567Q: Questions and Answers

Q1. Vacuum lines seem to run along with the VJ pipe shown on the existing drawings, does this RFQ require vacuum lines and do they connect to the supply and return VJ piping we are quoting? Please explain detail 1 & 2, 36-36 on P&I M32-36.

A1. No. The original VJ required active pumping prior to and sometimes during use. It is expected that all new piping delivered under this contract maintain vacuum requirements as specified (<10 mTorr for 12 months at warm conditions).

Q2. What elevation does the LHE return line enter into room 1904?

A2. Twelve feet (12') above the 1st floor.

Q3. What is the fail position of valves CV-18 thru CV-25?

A3. Closed.

Q4. Do valves CV-18 thru CV-25 require solenoids, if so what voltage do you want?

A4. No, solenoids are not required. Please supply controls per section 3.9.3 in the specification.

Q5. Do we replace valve CV-17D.

A5. No, but need to repair the spools for CV-17D (supply) and CV-53C (return).

Q6. 2.2 of specification 0064 states we are to replace the return manifold and that it will be simplified and current inst. Ports will not be replaced. Will NASA issue a new P&I to show the required components of the simplified manifold?

A6. Not before the contract is awarded, but a highlighted version of M32-36 will be posted on the library to help clarify the simplification.

Q7. Do we reuse as is the relief valves that are currently on the return manifold? Or install new valves? If new are required we need data.

A7. New are required per contract. Details are in the drawings and updated specification.

Q8. P&I M32-36 Return Manifold, there appears to be a flange connection near the STN STL to AL Transition that is part of the return manifold, do you have information that defines what is required on the manifold jacket at that connection?

A8. The SS-AL transition piece is ~6" within the chamber diameter. It is the contractor's responsibility to cut and weld to the SS process line and cut and repair the vacuum transition. The flange in question is the welded chamber penetration. Pictures of the internals have been posted on the library.

Q9. We can't locate the connections to chamber "B" for the supply or the return LHE VJ piping; can you describe which mechanical drawing may show the two connections?

A9. M32-36 shows the process supply and return to Ch-B. The supply "tee" is at the center bottom next to CV-17A. The Ch-B supply valve is CV-17B. At the top of the page the return tee is shown by CV-53A, and the Ch-B return valve is CV-53B.

Q10. Stress Analysis. SOW Para 7.2 (1) & (4). Conflict in B31.3 version year, we prefer 2008, is that acceptable?

A10. Yes, 2008 is acceptable.

Q11. Stress Analysis. SOW Para 7.2 (2). This Para says the fluid phases we need to consider are described in the technical specification. If 0064 is the technical specification, I didn't see any mention of fluid phases or flow.

A11. Section 3.2 describes "gaseous" helium, pressure vacuum to 150 PSIG, temperature 10 K to 330K. If flow rate required, the max would be 1200 lb/hr at 10K.

Q12. Stress Analysis. SOW Para 7.2 (5). This para states we are to consider the complete piping system and vessel interfaces. I assume that includes the supply manifold and supply and return VJ piping to Chamber "B" that is being reused. Do we model the existing piping or will NASA provide the movement, loads and moments of the reused/existing piping?

A12. NASA is not providing the movement. The contractor will need to consider the loads at the pre-existing connections.

Q13. Stress Analysis. SOW Para 7.2 (5). Can we get a drawing showing the existing pipe support locations, type and support designs? This is important in determining what we'll need to include in our proposal.

A13. No, currently the government is unable to find a drawing with those details.

Q14. Stress Analysis. SOW Para 7.2 (2). Please define the seismic load we are to use.

A14. Houston is in the "0" rating for U.S. seismic activity and design consideration (No need to worry about seismic activity).

Q15. Stress Analysis. SOW Para 7.2 (2). Please define the operating modes we are to use.

A15. See A11 for answer.

Q16. Stress Analysis. SOW Para 7.2 (2). Please define the number of thermal cycles we are to design to.

A16. 1000, thermal cycles.

Q17. Stress Analysis. SOW Para 7.2 (5). This Para states an individual report will be provided for each spool piece. We must analyze the proposed supply and return piping and manifold as an assembly. Individual spool analysis is not meaningful as each spools movement influences the movement of the spools that are linked together. Can the individual spool report be waived?

A17. A B31.3 report per spool is not required, but the contractor shall show adequate design for thermal expansion and contraction in design of each spool. This is not a detailed analysis, but just to verify you have designed each spool to handle the thermal extremes. No pressure or weight considerations required per spool, since the B31.3 of the run will account for that.

Q18. Can we use CVI style helium bayonets in the new supply and return VJ piping, other than in room 1904?

A18. If using bayonets for field installation, please refer to new requirements in the specification. CVI style would of course be acceptable, but in a horizontal configuration, dissimilar CTE male and female will be required.

Q19. P&I M32-36, Valves CV-53, CV-17B, CV-53B and CV-17 are illustrated as if they are flanged, are they flanged?

A19. No, they are not flanged; they are all welded.

Q20. P&I M32-36, FE66, do we reuse FE66 or replace? If we reuse or replace does NASA have info on this component?

A20. No. FE66 shall be removed from the system. A highlighted M32-36 has been posted to the technical library.

Q21. P&I M32-36, Near FE66 there are three stand pipes labeled "See Detail 36 36", we can't find that detail, where is it?

A21. Those stand pipes are not to be in the new piping. See new highlighted M32-36 in

technical library.

Q22. Spec 0064, 3.8.1, please clarify what is being described in 3.8.1.

A22. NASA is requesting that the contractor provide a valve to fit the pump-out ports as part of this contract. If different size ports are used, a valve for each type shall be provided.

Q23. Spec 0064, 3.9.2.4, when will we receive info on the existing support structure and existing supports? This info will enable us to more accurately estimate the engineering labor associated with the pipe stress and flexibility analysis.

A23. No, currently the government is unable to find a drawing with those details.

Q24. Spec 0064, 3.3, May we use seam welded piping on the vacuum jacket?

A24. Please quote seamless.

Q25. Origin of material, May we use and mixture of domestic and NATO material? May we use material from China?

A25. The Solicitation will be updated to include FAR Clause 52.225-1 Buy American Act-Supplies. The contractor is required to be complaint with FAR 52.225-1. The Buy American Act restricts the purchase of supplies that are not domestic end products. However, see FAR 25.103 for exceptions for the purchase of foreign end products.

Q26. Section 7.2, Under ASME B31.3 is this system "normal fluid service"?

A26. Yes, the system is normal fluid service.

Q27. Section 7.3, What type of leak solution is required? (Proof of Hydro Metal TAG 7.5.5)

A27. Leak testing should be done by helium mass spectrometry per ASTM E498 with the process line under pressure with a percentage of helium, and the calibrated leak detector on the vacuum port of the spools. Bayonets and RV's will be tested per ASTM E499 (GHe sniff).

Section 7.3 is stating that NASA wants to understand and approve the contractors plan and procedures for bakeout and vacuum retention at the PFR.

Section 7.5.5 the proof pressure test needs to be in accordance with chapter 6 of B31.3. We will substitute bubble leak checks for helium leak checks (ASTM E498, and E499 at bayonets)

Q28. Section 7.3, What size and diameter are the spools?

A28. The supply process lines are 2" schedule 10 pipe. The return lines are 2.5" schedule 10 pipe. The return manifold is 2" schedule 10 pipe with a 2" to 2.5" pipe Tee. The jacket is the contractor's responsibility to size. Please refer to a "normal pipe schedule" (NPS) for actual dimensions and tolerances.

Q29. Section 7.3, What is the wall thickness of the inner and outer piping?

A29. These are NPS schedule 10 pipe. The vacuum jacket is schedule 5.

Q30. Can the existing pipe mounting supports and hangers be reused?

A30. Yes. This is in section 3.9.2.2 of the spec -0064.

Q31. Does the supply manifold have a bayonet connection, or will we need to field-fit the new replacement piping to it?

A31. The supply manifold is welded to the piping. You will need to evaluate and field modify.

Q32. If the supply manifold requires a field-fit to the replacement pipe, are there means of

identifying the current vacuum pressure to verify its vacuum integrity?

A32. The supply manifold is the original design which required pumping prior to test. Previous measurements showed that section rose from <1mTorr to 30mTorr over 10 days warm conditions.

Q33. The 4th level Chamber-B return interface POC is a bayonet connection. Can we reuse the existing mating bayonet within our replacement system?

A33. Yes, we reuse the existing mating bayonet within our replacement system. The same is for the 2nd floor supply bayonet.

Q34. The 4th level Chamber-B return interface POC is a bayonet connection. Similarly, can we reuse the mating bayonet at the 2nd level Chamber-B supply interface POC?

A34. Yes, you can reuse the mating bayonet at the 2nd level Chamber-B supply interface POC.

Q35. Has it been confirmed that the return manifold control valves are 2 inch diameter and not 1.5 inch?

A35. No, but the following is what is on the controller housing. This does not match the drawings, so it will still be a requirement to verify:
CV-17; 2"
CV-18 and CV-25; ¾"
CV-19, 20, 21, 22, 23,& 24; 1 ¼"
CV-53; 2.5"

Q36. Is the intent of the return valves to relieve pressure or control pressure downstream?

A36. This question is not relevant to the Specifications and Statement of Work. For your information, we control flow when cold from the return valves.

Q37. There are two Tee connections on the first floor just as the pipe comes through the wall from the refrigeration room. Can you have some pictures posted of the two newer pipes that will remain? We'd like to know if it is possible to temporarily remove these pipes to make the field-modifications easier than if they remain hung in place.

A37. For your response, assume that you cannot remove that piping. Please see the technical library for pictures of the two newer pipes.

Q38. There are two Tee connections on the first floor just as the pipe comes through the wall from the refrigeration room. Prior to reworking or attaching to these existing lines, are there means of identifying the current vacuum pressure to verify the vacuum integrity of that particular line?

A38. Both sections where pumped down in June 2009. The supply line is at 1 Torr (not good), and the return line is at 79 mTorr. It is not the contractor's responsibility for pre-existing leaks.