



NACAG Tender Questions and Answers (Revision 0 - 03/26/2025)

1) NACAG-ANNEX-001 - N₂O REDUCTION PLANT AND PROCESS DATA REV.02. 5.11a Gas flow before NSCR: 29348 kg/h. In Rev.1 it was 25000 and now it has increased by almost 18%. Confirm that 29348 kg/h will be considered as the design mass flow for N₂O reduction.

Answer: During the plant shutdown, modifications were made to the nitric acid plant's cooling network, which allowed the plant's design capacity to be reached, increasing the normal operating gas flow rate.

2) NACAG-ANNEX-001 - N₂O REDUCTION PLANT AND PROCESS DATA REV.02. 5.22 Tail gas pressure (bar a) before the turbine 7.5-8.0 bar a. In Rev.1 it was 6.4. Confirm that 7.5-8.0 will be considered as the design mass flow for N₂O reduction.

Answer: During the plant shutdown, the platinum filter located upstream of the cooler-condenser (10-E-153) was removed, which reduced the pressure loss throughout the plant and therefore the pressure at these points is higher than originally indicated.

3) ANEXX-006 Is there a plant air stream available at about 11 bar a pressure and a flow of 1200 Nm³/h to complement the O₂ for combustion?

Answer: No.

4) ANEXX-006 Alternative designs. Is it mandatory for bidders to quote all 3 requested options?

Answer: Yes, APASA expects all bidders to quote all 3 options. Additionally, if they wish to include other options, these will be considered during the evaluation.

5) NACAG-POT-RQC-(ESP)-REV.3- 6.1 Source of funds What happens with issued invoices that have NOT been paid?

Answer: Question answered in the draft of the contract with the thirteenth of the contract in the bid.

6) NACAG-POT-RQC-(ESP)-REV.3- 6.1 Source of funds What happens with certified work that has NOT yet been invoiced?

Answer: Question answered in the draft of the contract with the thirteenth of the contract in the bid.

7) NACAG-POT-RQC-(ESP)-REV.3- 6.1 Source of funds What happens with work that has been performed but not yet certified or invoiced?

Answer: Question answered in the draft of the contract with the thirteenth of the contract in the bid.

8) ANNEX-006 - Project options - N₂O ABATEMENT – Alternative designs. To develop the alternatives, we require the P&ID of the nitric acid plant, as well as drawings of the concrete bases and foundations of reactor 10-R 203.

Answer: A dropbox link with technical information requested in each question (e.g., P&ID, piping class, etc.) was sent to all bidders who signed a confidentiality agreement and submitted form 8 declaring their interest in participating.

9) ANNEX-006 - Project options - N₂O ABATEMENT – Alternative designs. What is the integrated heater without compressors, option 2? If it is a combustion chamber, what is the air supply source and what type of fuel will be used?



Answer:

- *Air supply source: free oxygen from the tail gas stream.*
- *Fuel Natural gas or purge gas.*

For both items, contestants must evaluate feasibility.

10) Is it appropriate to propose alternatives to achieve the objective? If so, it is necessary to understand the type of steam generated by boiler 10-V-152 and the efficiency with which it is used in the steam turbine driving the compressor (flow, pressure, and temperature after the control valve at the steam turbine inlet, as well as the exhaust steam pressure and temperature). This information is necessary to evaluate the efficiency of an alternative approach.

Answer: Other proposals are accepted.

We assume you refer to 10-BO-152, saturated steam at 15 bar. It will also be evaluated based on condensate loss. Maximum continuous inlet temperature to the expander: 640°C.

11) Is it mandatory to submit all 3 options or is it acceptable to submit only 1 or 2?

Answer: APASA expects to receive all 3 options. If the bidder wishes to present an improvement or additional option besides those listed in Annex 006, it will be evaluated. However, Annex 005 must also be completed.

12) Who is responsible for the NOX control instrument at the inlet of the new reactor to regulate temperature?

Answer: Currently we do not have NOx control instruments at the abatement inlet. On-line N2O, NO and O2 analyzers are available at the stack. In addition, another bidding process contemplates the monitoring of N2O gases both upstream and downstream of the equipment..

13) Is there a more detailed drawing of the reactor (10-R-203)?

Answer: More drawings attached, see attached documentation in technical information package (in Dropbox Documentation NACAG, 09-PLANOS) for companies that have signed the confidentiality agreement, as well as see all the questions and answers of the document uploaded to the website.

14) In the case of options 2 and 3. Who will be responsible for financing the heating system? According to the current tender, the only available funding is from NACAG, and in the previous tender this item was outside its scope.

Answer: APASA is responsible for the heating system.

15) The tender mentions a minimum inlet temperature to the expander of 550°C, but annex 1 states the inlet temperature should be between 590° and 610°. Please confirm the required temperature.

Answer: Minimum inlet temperature to the expander is 550°C; optimum operating range 590-610°C.

16) Can you share information regarding the civil bases currently supporting the reactor (R-203) and its structure? What is the design weight limit these bases can support?

Answer: See attached documentation in the technical information package (Dropbox) for companies that signed the confidentiality agreement, in addition to reviewing all Q&A uploaded to the website.



17) Could you specify where ammonia can be taken from and if it is available?

Answer: The lines available for connection are indicated in the drawing: Plot Plan A1290-01-10-10-T03-201_3. They are marked in the drawings uploaded to the dropbox

18) What are the conditions (temperature and pressure) in which ammonia is available?

Answer: Ammonia

T(°C) 29 normal max, 13 min, and 40 mechanical design

Pressure Up to (barg) 15 normal, 16 max, 14 min, and 41 mechanical design

19) Are there limitations on the amount of NH₃ that can be supplied?

Answer No, but note that your consumption will be taken into account in the evaluation matrix.

20) Is it an option to reuse the existing NSCR reactor for tertiary reduction as it is today, or is some intervention necessary?

Answer: It is up to the bidder; a prefeasibility study must be carried out.

21) Is any value assigned to the purge gas? Or is it freely usable?

Answer: It is free, the purge gas from the ammonia plant can be used in the process, but the consumption will be considered in the technical evaluation matrix.

22) What is the minimum temperature downstream of the turbo expander?

Answer: According to B.M. (chimney inlet) normal operating temperature: 250 °C; pressure: 1 bar at

23) Are there any size restrictions for the new reactor (R-204) in any of the 3 options?

Answer: No, the bidder must evaluate this.

24) Is it fair to assume, as in the previous tender, around 1500 ppm of N₂O in the tail gas?

Answer: Yes. The value comes from a simulation, so it is an estimate; use 1,500 ppmv as a reference.

25) Is the increase in inlet flow to the reactor compared to the previous tender correct?

Answer: Yes, idem question N°: 1.