



TERM OF REFERENCE

500 KG/H MINERAL PROCESSING PLANT

PT ANTAM (Persero) Tbk.

Unit Bisnis Pengolahan dan Pemurnian Logam Mulia

Jl. Raya Bekasi KM.18. Pulogadung, Jakarta 13210

Jakarta - INDONESIA

Jakarta, Jan 6th 2022

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1. DESCRIPTION

UBPP Logam Mulia (hereinafter abbreviated as LM) is one of PT ANTAM Tbk's business units engaged in refining, manufacturing, assaying, and trading gold and silver which is located at Jalan Raya Bekasi Km 18 Km, Pulogadung, East Jakarta.

2. BACKGROUND

LM is the only gold and silver processing and refining plant in Indonesia that has been accredited by LBMA. We are also a market leader in the gold and silver refining and trading in Indonesia. One of the vital processing is the metal recovery process in the slag and the results of the destruction of the used crucibles. Currently LM operates crusher, rod mill and shaking table as the main equipment to recover metal in the material. The final products are concentrate which cycles back to main refining process and final tailing that has a maximum Au content of 500 gpt to be stored in warehouse.

3. PURPOSE

LM intends to procure 1 (one) set of mineral processing equipment capacity of 500 kg/hr material to accelerate the process of concentration and separation of metals (concentrates) and tailings from slag material and used crucible in accordance with the requirements of internal quality targets set by the management of LM. The initial concentration of metal in the slag and the used crucible is 1000 - 1500 gpt Au and 3000 – 10.000 gpt Ag. Product from this Mineral Dressing Unit are CHG (Concentrate High Grade) and final tailing / CLG (Concentrate Low Grade).

Final tailings / CLG are obtained and samples are taken. The metal content in the final tailings / CLG commonly are Au <500 gpt.

4. TECHNICAL SPECIFICATION

Description of the process and technical specification of the mineral processing plant are as follow:

No.	Item / Eqp	Qty	Description
1.	Plant / Engineering Design	lumpsum	
2.	Main Eqp.		
	Jaw Crusher	1 unit	Crushing system adopts one stage open circuit process, crushing particle size maximum 125 mm. Material is loaded manually to the crusher. The particle size of crusher output around 10 – 40 mm.
	Ball Mill, electrical control, drum screen	1 unit	Grinding adopts one stage closed-circuit grinding and classification process, designed grinding fineness is from 74 to 105 mikron (-140# +200#). Drum screen aperture is TBA and is set at discharged outlet of ball mill. Oversize particle of drum screen passes

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			through belt iron remover to get the metal and the non-magnetic material return to ball mill by manual for regrinding. The undersize material in the form of slurry is pumped to shaking table.
	Shaking table	1 unit	Capacity TBA Motor power TBA Beneficiation Area of Bed Surface TBA
	Thickening cone	2 unit	2 stage thickening process for the tailing to reduce water content
	Chamber filter press	1 unit	Filter area TBA Number of filter chamber TBA Volume of filter chamber TBA
	Drying cabinet	1 unit	Used for drying the CHG from shaking table. Power TBA Dimension max 1.2 x 0.5 x 0.8 m
	Belt iron remover	1 unit	Field intensity TBA
	Other utility/accessories: Slurry pump, feeding tank, frequency control cabinet	1 system	TBA
3.	Installation materials	lumpsum	Including electrical control cabinet, cables wires & electric installation materials, pipeline, etc.
4.	Steel platform & support	1 system	-
5.	Guide of installation & commissioning on site	lumpsum	-
6.	One-year spare part	lumpsum	Liner, coupler joint wear part, etc.

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5. 2. Guarantee / warranty and after sales service from the agency for equipment for at least 1 (one) years, including damage spare part.

6. DELIVERABLES

- 6.1. Detailed drawing diagram (as built drawing, single line diagram, lay out plan,) of a Mineral Processing Plant equipment in the form of hardcopy (if applicable) and softcopy (PDF files).
- 6.2. Installed 500 Kg/H Mineral Processing Plant system and can be operated properly according to the functions, and meet the specifications according to the provisions in point 4.
- 6.3. Manual book of user guide, manual book of Equipment maintenance, Catalogue of spare parts, Documents of Work Instruction, and Documents of JSA, and technical documentation (spare part list, safety instruction, etc).
- 6.4. Product, service, and spare parts warranty for 1 year.
- 6.5. Guarantee the availability of spare parts for at least 5 years.

7. ANTAM'S RIGHTS AND OBLIGATIONS

7. 1. Must provide all data, information and all other information required by VENDOR in carrying out its work in accordance with the agreed work schedule.
7. 2. Must provide VENDOR's work location permit for work implementation.
7. 3. Required to make payments in accordance with the provisions in the contract.
7. 4. It is mandatory to take preventive measures (first aid in an accident) when a VENDOR worker suffers an accident in the workplace and immediately reports to VENDOR.
7. 5. ANTAM has the right to reprimand VENDOR for negligence at work
7. 6. ANTAM has the full right to report VENDOR workers to ANTAM if the person concerned is proven to have committed a criminal act.
7. 7. ANTAM has the right to make a complaint to VENDOR:
 - If the results of the procurement of 500 Kg/H Mineral Processing Plant system do not meet the design specifications.
 - VENDOR personnel are deemed incompetent in carrying out the work provided by ANTAM according to specifications.
7. 8. ANTAM has the right to evaluate the performance of VENDOR and follow up on the results of the evaluation.
7. 9. ANTAM provides a source of electricity, compressed air and water for the purpose of machine installation.

8. VENDOR'S RIGHTS AND OBLIGATIONS

- 8.1. Must carry out and complete the entire scope of work as well as possible in accordance with the time agreed upon by the PARTIES
- 8.2. Must provide 500 Kg/H Mineral Processing Plant system along with the installation.
- 8.3. Must obey the applicable laws and regulations, the provisions of occupational safety, health and environment that apply at ANTAM, respect the applicable regulations.
- 8.4. Must prepare qualified, competent and experienced personnel to carry out the job.

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- 8.5. Obligated to guarantee of installation and performance of 500 Kg/H Mineral Processing Plant system for 1 (one) year after the work is handed over (BA-STP).
- 8.6. VENDOR agrees that all work is carried out properly, free of technical and aesthetic defects and in accordance with the ToR Documents. If requested, VENDOR is able to provide evidence regarding these matters in this item.
- 8.7. In carrying out work in accordance with the aforementioned, VENDOR is obliged to protect the environment and using environmentally friendly work methods. VENDOR is responsible for environmental damage caused by negligence in any form.
- 8.8. Must provide the necessary facilities, equipment and PPE, except for certain facilities that have been previously approved to be provided by ANTAM.
- 8.9. Must coordinate with officials authorized by ANTAM.
- 8.10. Has the right to receive payment for the progress of work completed in accordance with the terms of payment in the contract.
- 8.11. Must carry out mechanical and electrical installation and commissioning in accordance with the technical specifications required in the SOP or WI manuals.
- 8.12. Must coordinate with ANTAM to carry out mechanical or electrical installation and commissioning work.
- 8.13. Must provide operation and troubleshooting training for personnel determined by ANTAM.

9. VENDOR SPECIFICATION

- 9.1. Vendors are limited liability companies.
- 9.2. The vendor has the experience of supplying mineral processing machines, and having competence in mineral processing process proven by some portfolio projects documents.

10. TIMELINE

Plant design, fabrication, delivery, and installation of a 500 Kg/H Mineral Processing Plant system must be completed within 8 (eight) months after the signing of the PO / contract.

11. PLACE OF DELIVERY OF GOODS

The location for the delivery of mineral processing machines was handed over by PT.ANTAM Tbk UBPP Logam Mulia in the Smelting work unit.

12. TERMS OF PAYMENT

During the Term of Work Implementation, the term of payment amounts as per below:

- 10% payment after the Plant / Engineering Design is submitted by the VENDOR and accepted by the ANTAM.
- 70% payment at the time of delivery to UBPP LM site.
- 15 % after installation, commissioning, training and the acceptance certificate has been signed by Parties.
- 5% after 3 months supervision / probation period.

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13. K3 STANDAR AND ENVIRONMENT

13.1.VENDOR must carry out work in a safe manner and must comply with applicable Occupational Safety and Health regulations from the government and other regulations set by UBPP Logam Mulia contained in the Standard Operating Procedure and Work Instruction

13.2.VENDOR must participate in the Occupational Safety and Health Program created by UBPP Logam Mulia, but not limited to personnel orientation regarding Occupational Safety and Health, regular meetings with personnel, safety patrols VENDOR and other activities regulated by UBPP Logam Mulia. of the program is reported to the Head of Engineering through the Safety Environment Officer every month. VENDOR who employs more than 50 (fifty) workers must have at least 1 (one) person in charge of the Occupational Safety and Health program who is placed in the UBPP Logam Mulia whose appointment is reported to the Head of Engineering.

13.3.VENDOR is fully responsible for the implementation of the Occupational Health and Safety program for each personnel during the work.

13.4.VENDOR must immediately return and correct conditions that do not support work safety and health efforts from time to time which are notified by UBPP Logam Mulia to VENDOR or not notified beforehand.

13.5.If personnel experience a work accident caused by the negligence of VENDOR, VENDOR shall be required to bear all necessary costs and report it in writing to UBPP Logam Mulia immediately within 8 (eight) hours after the work accident occurs.

13.6. In the event of a temporary suspension of Work Implementation due to an accident and/or during an investigation carried out by the Mine Inspection Executor/authorized Agency or by the UBPP Logam Mulia, then all losses of the VENDOR shall be borne by the VENDOR in full.

13.7.VENDOR are required to provide Occupational Safety and Health equipment for their workers to carry out work in accordance with the provisions.

13.8.Any personnel who are not equipped with the Occupational Safety and Health equipment stipulated in the Occupational Safety and Health Management System (SMK3) are not allowed to enter the work location.

13.9. VENDOR must carry out a safety talk before the work shift begins by submitting a report and proof of attendance to the Safety Environment Officer which is approved by the Supervisor of UBPP Logam Mulia

13.10. VENDOR must follow the Standard Operating Procedures and Work Instructions in the field of work safety that apply at UBPP Logam Mulia

13.11. Every time you do a job, VENDOR is required to make a Safety Job Analysis (JSA) for the job.

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13.12. In the event of a work accident for personnel, and it is caused by the negligence of the VENDOR based on the investigation results of UBPP Logam Mulia, then in the case of the accident, the VENDOR will be subject to a fine deducted from the Contract Value of the work in question, with the following details:

Description	Financial penalty % deduction on contract value per year	Administrative sanctions
Fatality / Death	2.50%	Dismissal (basic investigation of ANTAM / Mining Inspector)
Serious injury	1.25%	Contractor warning
Minor injury	1.00%	Written warning
Dangerous / Occurrence	1.25%	Contractor warning

K3 discipline violations (adjusted to the PKB applicable at ANTAM)		
SP 3 (severe violation) contractor worker	0.50%	Written warning
SP 2 (medium offense) contractor worker	0.37%	Written warning
SP 1 (mild violation) contractor worker	0.25%	Written warning

14. CRITERIA OF WINNER ASSESTMENT

The evaluation is carried out on technical and price aspects. VENDOR should fulfill all technical evaluation as stated in this TOR document, related to point number 4 to 10 above. Price evaluation is only carried out for bids that pass the technical evaluation. Weighting distribution and details of the evaluation parameters are given in the following table:

Evaluations Criteria	Note
Technical aspect	
- Technical specification of equipment (point 4)	Mandatory
- Scope of works (point 5)	Mandatory
- Deliverables (point 6)	Mandatory
- Has the experience of supplying mineral processing machines, and having competence in mineral processing process proven by some portfolio projects documents.	Mandatory
- Timeline (point 10) Make a statement of ability to complete the work for 5 (five) months including fabrication, delivery, installation, commissioning and training.	Mandatory
Price	100%