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RFQ Number	NLM-QUO-25/057
Request for Quotation Date	24 June 2025
RFQ Closing Date	18 July 2025
RFQ Closing Time	12:00
Compulsory Site Briefing	Not compulsory but if more information required can be arranged
Contact Person	Catherine Matima
Quotation Validity	90 Days from the closing date
Submission Details	RFQ Response must be sent to: catherine.matima@necsa.co.za
RFQ Description	To supply Methane, Oxygen and LPG Flame Arresters ((ATEX Rated If applicable),) as per the attached specification sheets

Dear Service Provider

Kindly provide a quotation for goods and or services as outlined in section 2 of this document.


1. Introduction

The South African Nuclear Energy Corporation Limited (Necsa) is a state-owned public company (SOC), registered in terms of the Companies Act, (Act No. 61 of 1973), registration number 2000/003735/06.

The Necsa Group engages in commercial business mainly through its wholly-owned commercial subsidiaries: NTP Radioisotopes SOC Ltd (NTP), which is responsible for a range of radiation-based products and services for healthcare, life sciences and industry, and Pelchem SOC Ltd (Pelchem), which supplies fluorine and fluorine-based products. Both subsidiaries, together with their subsidiaries, supply local and global markets, earning valuable foreign exchange for South Africa and are among the best in their field in their respective world markets.

Necsa's safety, health, environment and quality policies provides for top management commitment to compliance with regulatory requirements of ISO 14001, OHSAS 18001 and RD 0034 (Quality and Safety Management Requirements for Nuclear Installations), ISO 9001 and ISO 17025.

Necsa promotes the science, technology and engineering expertise of South Africa and improves the public understanding of these through regular communications at various forums and outreach programmes to the community. We are a proudly South African company continuously striving, and succeeding in many respects, to be at the edge of science,

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technology and engineering related to the safe use of nuclear knowledge to improve our world.

For more information on Necsa, please visit: www.Necsa.co.za

2. Background

Necsa plans to establish a plasma gasification demonstration facility in a laboratory on-site to volumetrically reduce uranium-containing PTFE candle filters. Flame arresters are utilized as safety devices in the gas supply system (ENS-FDP-PID-24005 [1]) to prevent the propagation of flames that could potentially cause explosions within the facility. A total of three flame arresters are required, as follows:

- i. **Methane Flame Arrester:** Flame arrester Y83350 is installed on the methane gas supply line 15-833-MGVP-063 to the Depolymerisation Reactor R82014 in the PTFE Filter Destruction Facility [1], downstream of the pressure regulator PCV83344B. Its function is to allow flow of methane to the Depolymerisation Reactor under normal operating conditions, but prevent the transmission of flame from a downstream source, in the event of ignition taking place. Details of the methane flame arrester are given in the attached Specification Sheet, ENS-FDP-SPE-24048 [2].
- ii. **Oxygen Flame Arrester:** Flame arrester Y83351 is installed on the oxygen gas supply line 15-833-GSVP-064 to the Plasma Reactor R82018 in the PTFE Filter Destruction Facility [1], downstream of the pressure regulator PCV83345B. Its function is to allow flow of oxygen to the Plasma Reactor under normal operating conditions, but prevent the transmission of flame from a downstream source, in the event of ignition taking place. Details of the oxygen flame arrester are given in the attached Specification Sheet, ENS-FDP-SPE-24045 [3].
- iii. **LPG Flame Arrester:** Flame arrester Y83352 is installed on the Liquefied Petroleum Gas (LPG) supply line 15-833-LPVP-065 to the Plasma Reactor R82018 in the PTFE Filter Destruction Facility [1], downstream of the pressure regulator PCV83346B. Its function is to allow flow of LPG to the Plasma Reactor under normal operating

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conditions but prevent the transmission of flame from a downstream source, in the event of ignition taking place. Details of the LPG flame arrester are given in the attached Specification Sheet, ENS-FDP-SPE-24047 [4].

3. Scope of Work


Item Description	Quantity
To supply Methane, Oxygen and LPG Flame Arresters (ATEX Rated If applicable), as per the attached Specification Sheets, [2], [3] and [4]. All other equipment and components identified in the P&ID [1] and referenced in Section 2 are outside the scope of work considered here.	3

4. Attachments

Ref #	DOCUMENT NAME	DESCRIPTION
01	ENS-FDP-PID-24005, Rev. 4	PTFE Filter Destruction Project P&ID Diagram – Gas Supply System 833
02	ENS-FDP-SPE-24048, Rev. 2	Methane Flame Arrester Specification Sheet
03	ENS-FDP-SPE-24045, Rev. 1	Oxygen Flame Arrester Specification Sheet
04	ENS-FDP-SPE-24047, Rev. 2	LPG Flame Arrester Specification Sheet

5. Pricing

- All price quoted to include all applicable taxes.
- Price must be fixed and firm.
- Price should include additional cost elements such as freight, insurance until acceptance, duty where applicable, disbursements etc.
- Quotation must be completed in full, incomplete quote could result in a quote being disqualified.
- Payment will be according to Necsa's General Conditions of Purchase.

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6. Evaluation

6.1. Phase 1- Functionality Evaluation / Technical Evaluation


Where functional or technical evaluation criterion is applicable, assessment will be performed in terms of the criterion listed below and the criterion may include Technical, Performance, Quality and Risk.

If the Bidder's response to the Technical templates does not indicate that the Bidder can support an acceptable technical solution, the Bidder's response will be rejected and not evaluated further.

Together the Technical, Performance & Quality and Risk criteria make up the functionality criterion and a Bidder's Proposal will be evaluated for functionality out of a possible 100 points. Only RFQ responses achieving an evaluation score of greater than the set threshold points out of the possible 100 points and which score a number of points for functionality that is greater than or equal to the set threshold points of the number of points achieved by the highest scoring Bid for functionality will be selected to progress to the second stage.

If the Bidder's response to the Technical templates does not indicate that the Bidder can support an acceptable technical solution, the Bidder's response will be rejected and not evaluated further:

Item	Requirement	Weight	Points	Criteria
1	ISO 9001: 2015 (or latest) accredited Supplier must provide evidence (ISO 9001 certificate)	25	25	ISO 9001 accreditation of supplier of the required products. OR ISO 9001 accreditation of OEM and OEM letter listing local supplier as authorised supplier and service agent
2	Supplier must provide letter referencing after sales service and maintenance	25	25	Supplier have a service and repair workshop Supplier holds critical spares as stock items
			15	Supplier have a service and repair workshop
			10	Supplier outsources service and repair

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Item	Requirement	Weight	Points	Criteria
3	Supplier lead-time	25	25	Product available within 4 weeks of issue of Purchase Order
	Supplier must specify lead-time		15	Product available within 6 weeks of issue of Purchase Order
			10	Product available within 8 weeks of issue of Purchase Order
4	Suitability of Product	25	25	Supplier adequately demonstrates how the recommended product meets the user’s requirements or specifications The products are also required to be ATEX rated.
Total		100		


Note: Bidders that score <80 out of 100 in respect of Technical/Functional evaluation criteria will be regarded as submitting a non-responsive bid and will not be evaluated further.

6.2. Phase 2 - Evaluation In Terms Of Preferential Procurement Policy Framework Act, 2022

This bid will be evaluated and adjudicated according to the 80/20 point system, in terms of which a maximum of 80 points will be awarded for price and 20 points will be allocated based on the specific goals (B-BBE status level).

	POINTS
PRICE	80
SPECIFIC GOALS (B-BBEE status level)	20
Total points for Price and SPECIFIC GOALS	100

**Preference goal
B-BBEE status level contributor**

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B-BBEE Status Level of Contributor	Number of points (80/20 system)
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

7. Required Documentation

- Tax Clearance Certificate (Tax pin issued by SARS)
- Declaration of interest (SBD 4)
- BEE Certificate / Applicable Affidavit if classified as EME
- Letter of Good Standing (COID) only if Applicable due to the nature of work required
- Any other document or certification that might have been requested on this RFQ

8. Important








- 8.1. Quotation must be submitted on or before the RFQ closing date and time stated above.
- 8.2. Orders above R 30 000 will be evaluated according to the PPPFA 80/20-point system and a functionality scorecard where applicable and the ones above R 1 Million will be subjected to the tender process.
- 8.3. This RFQ is subjected to the Necsa's General Conditions of Purchase, Preferential Procurement Policy Framework Act 2000 and the Preferential Procurement Regulations, 2022, the General Conditions of Contract (GCC) and, if applicable, any other legislation or special conditions of contract.
- 8.4. Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for specific goals are not claimed.
- 8.5. The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to specific goals, in any manner required by the purchaser.

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- 8.6. For a Bidder to obtain clarity on any matter arising from or referred to in this document, please refer queries, in writing, to the contact details provided above. Under no circumstances may any other employee within Necsa be approached for any information. Any such action might result in a disqualification of a response submitted in competition to this RFQ.
- 8.7. No goods and/or services should be delivered to Necsa without an official Necsa Purchase order.
- 8.8. Necsa reserves the right to; cancel or reject any quote and not to award the RFQ to the lowest Bidder or award parts of the RFQ to different Bidders, or not to award the RFQ at all.
- 8.9. The supplier shall under no circumstances offer, promise or make any gift, payment, loan, reward, inducement, benefit or other advantage, which may be construed as being made to solicit any favour, to any Necsa employee or its representatives. Such an act shall constitute a material breach of the Agreement and the Necsa shall be entitled to terminate the Agreement forthwith, without prejudice to any of its rights
- 8.10. By responding to this request, it shall be construed that: the bidder, hereby acknowledge to be fully conversant with the details and conditions set out in the Necsa's General Conditions of Purchase, Preferential Procurement Policy Framework Act 2000 and the Preferential Procurement Regulations, 2022, the General Conditions of Contract (GCC), Technical Information and Specifications attached, and hereby agree to supply, render services or perform works in accordance therewith.

ENGINEERING SERVICES DEPARTMENT										
FLAME ARRESTER SPECIFICATION SHEET										
Project					PTFE Filter Destruction Project		Unit Tag Number		Y83350	
Datasheet Doc. No.					ENS-FDP-SPE-24048		Revision		1.0	
Description					Flame arrester Y83350 is installed on the methane gas supply line 15-833-MGVP-063 to the Depolymerisation Reactor R82014 in the PTFE Filter Destruction Facility ^[1] , downstream of the pressure regulator PCV83344B. Its function is to allow flow of methane, but prevent the transmission of flame from a downstream source, in the event of ignition taking place.					
Plant Location					Necsa, Pelindaba, North-West Province					
Equipment Location					PTFE Filter Destruction Facility - Process area outside Laboratory-131, Building V-H2					
Safety Classification					SC-3(C) and Non-classified(N)					
Quality Classification					SC-3(C) and Non-classified(N)					
Cylinder banks ^{Note 1}										
<input checked="" type="checkbox"/>	Above ground	Diameter	Note 1	m	Design pressure	Note 1	kPa(g)			
<input type="checkbox"/>	Buried	Height	Note 1	m	Design vacuum	Note 1	kPa(g)			
<input type="checkbox"/>	Insulated	Wall thickness	Note 1	m	Pumping-in rate	Note 1	m ³ /h			
<input type="checkbox"/>	Ins. Thickness	Note 1		mm	Pumping-out rate at 25 °C and 20000 kPa(g)	0,0042	m ³ /h			
<input type="checkbox"/>	Blanketed	Blanketing gas	N/A		Design standard	Note 1				
Stored product										
Component Name		Formula	Vol%	Mass%	Flashpoint °C	Haz. Group	MESG (mm)	Ex-Gr		
Methane		CH ₄	>99%	>99%	-104	2,1	0,3	N/A		
Process information										
Design temperature		93 ^[3]	°C	Design pressure		20685 ^[3]	kPa(g)			
Operating temperature		Ambient ^[4]		Operating pressure		100 ^[5]	kPa(g)			
				Back pressure		N/A	kPa(g)			
Installation										
<input checked="" type="checkbox"/>	In-line	<input checked="" type="checkbox"/>	Horizontal	Distance to source of ignition		3	m			
<input type="checkbox"/>	End-of line	<input type="checkbox"/>	Vertical	<input type="checkbox"/>		Top of Tank/vessel				
Function										
<input type="checkbox"/>	Pressure	<input type="checkbox"/>				Endurance burning proof	<input type="checkbox"/>			Temperature monitored
<input type="checkbox"/>	Vacuum	<input type="checkbox"/>				Short term burning proof				
<input type="checkbox"/>	Pressure & Vacuum	<input checked="" type="checkbox"/>				Deflagration proof	<input type="checkbox"/>			Pressure monitored
<input checked="" type="checkbox"/>	Flame arrester	<input checked="" type="checkbox"/>				Detonation proof	<input type="checkbox"/>			Bi-directional
Flame arrester data										
Size nominal		15 ^[5] , Note 2	mm	Flow	0,6 ^[4]	m ³ /h	Density	1,13 ^[5]	kg/m ³	
Pressure nominal		100 ^[5]	kPa(g)	Inlet flange type		Screwed female BSPT				
Adjusted set pressure		Supplier to advise	kPa(g)	Outlet flange type		Screwed female BSPT				
Adjusted set vacuum		Supplier to advise	kPa(g)	Pressure drop		Supplier to advise ^{Note 3}		kPa(g)		
Material Construction for body / flanges										
Pressure carrying parts		Internals				Lining				
SS 304/304L Class 1500		SS 304/304L Class 1500				Carbon Steel				
End connection / Facing		Special drilling of flange connections								
Threaded		Supplier to advise								
Paint finish		Weather hood				O-ring Seal				
Supplier to advise		Supplier to advise				Supplier to advise				
Inspection / Documentation (to be provided by supplier)										
<input checked="" type="checkbox"/>	Material certificate		<input checked="" type="checkbox"/>	Work certificate		<input checked="" type="checkbox"/>	Performance certificate			


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ENGINEERING SERVICES DEPARTMENT			
FLAME ARRESTER SPECIFICATION SHEET			
Project		PTFE Filter Destruction Project	Unit Tag Number
Datasheet Doc. No.		ENS-FDP-SPE-24048	Revision
			Y83350
			1.0
REFERENCE DRAWINGS AND DOCUMENTS			
[1] ENS-FDP-PID-24005, PTFE Filter Destruction System P&ID Diagram - Gas Supply System 833			
[2] ENS-OWPVR-FDM-24001, Uranium Contaminated Waste Oil Plasma Gasification Basic Engineering Design: P&ID - Gas Supply System (CH ₄)			
[3] MES-PIPE-SPE-0015, Piping Material Specification Line Class MGVP, May 2024			
[4] ENS-FDP-CLC-24014, Mass Balance Calculation for the PTFE Filter Destruction System			
[5] ENS-FDP-CLC-24004, PTFE Filter Destruction Piping System Design Calculations - Line Sizing			
NOTES			
Note 1: Methane is supplied from a cylinder bank containing 2 cascades, each with three 8,1 kg gas cylinders. The cylinder bank will be installed outside the laboratory area ^[2] . During operation, one cascade will be on-line, while the other is on standby. Each gas cylinder has a full pressure of 200 Bar(g) at 20°C.			
Note 2: This is the size of the schedule 40 pipeline in which the flame arrester will be installed.			
Note 3: Pressure drop across flame arrester to be minimized to facilitate control of gas supply pressure to downstream user.			
	Name	Signature & Date	
Compiled by	BM Khumalo, (Senior Process Engineer)		
Checked	MB Msane (Mechanical Engineer)		
Checked	M Correia (Senior Process Engineer)		
Checked	G Manuel (Chief C&I Engineer)		
Checked	S Mngoma (Chief Mechanical Engineer)		
Checked	W van den Berg (Chief Electrical Engineer)		
Approved by	K Moodley (Chief Process Engineer)		
Distribution	1. ES Records 2. Docman 3. Dr K Moodley 4. Mr D Ngwenya		








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ENGINEERING SERVICES DEPARTMENT									
FLAME ARRESTER SPECIFICATION SHEET									
Project	PTFE Filter Destruction Project				Unit Tag Number	Y83352			
Datasheet Doc. No.	ENS-FDP-SPE-24047				Revision	1.0			
Description	Flame arrester Y83352 is installed on the LPG gas supply line 15-833-LPVP-065 to the Plasma Reactor R82018 in the PTFE Filter Destruction Facility ^[1] , downstream of the pressure regulator PCV83346B. Its function is to allow flow of LPG but prevent the transmission of flame from a downstream source, in the event of ignition taking place.								
Plant Location	Necsa, Pelindaba, North-West Province								
Equipment Location	PTFE Filter Destruction Facility - Process area outside Laboratory-131, Building V-H2								
Safety Classification	SC-3(C) and Non-classified(N)								
Quality Classification	SC-3(C) and Non-classified(N)								
CYLINDER BANKS ^{Note 1}									
<input checked="" type="checkbox"/> Above ground	Diameter	Note 1		m	Design pressure	Note 1	kPa(g)		
<input type="checkbox"/> Buried	Height	Note 1		m	Design vacuum	Note 1	kPa(g)		
<input type="checkbox"/> Insulated	Wall thickness	Note 1		m	Pumping-in rate	Note 1	m³/h		
<input type="checkbox"/> Ins. Thickness	Note 1			mm	Pumping-out rate at 25 °C and 500 kPa	0,162	m³/h		
Blanketed	Blanketing gas				Design standard	Note 1			
STORED PRODUCT									
Component Name	Formula	Vol%	Mass%	Flashpoint	Haz. Group	MESG	Ex-Gr		
LPG Gas	C3H8, C4H10, C4H8	>95%	>95%	-104	2,1	>0,75	N/A		
PROCESS INFORMATION									
Design temperature	93 ^[3]	°C		Design pressure	20685 ^[2]	kPa(g)			
Operating temperature	Ambient ^[4]	°C		Operating pressure	100 ^[5]	kPa(g)			
				Back pressure	N/A	kPa(g)			
INSTALLATION									
<input checked="" type="checkbox"/> In-line		<input checked="" type="checkbox"/> Horizontal	Distance to source of ignition		4	m			
<input type="checkbox"/> End-of line		<input type="checkbox"/> Vertical	<input type="checkbox"/> Top of Tank/vessel						
FUNCTION									
<input type="checkbox"/> Pressure		<input type="checkbox"/> Endurance burning proof			<input type="checkbox"/> Temperature monitored				
<input type="checkbox"/> Vacuum		<input type="checkbox"/> Short term burning proof							
<input type="checkbox"/> Pressure & Vacuum		<input checked="" type="checkbox"/> Deflagration proof			<input type="checkbox"/> Pressure monitored				
<input checked="" type="checkbox"/> Flame arrester		<input checked="" type="checkbox"/> Detonation proof			<input type="checkbox"/> Bi-directional				
FLAME ARRESTER DATA									
Size nominal	15 ^[5] Note 2	mm	Flow at 25°C and 100 kPa(g)	0,4 ^[4]	m³/h	Density	3,4 ^[5]	kg/m³	
Pressure nominal	100 ^[5]		Inlet flange type	Screwed female BSPT					
Adjusted set pressure	Supplier to advise	kPa(g)	Outlet flange type	Screwed female BSPT					
Adjusted set vacuum	Supplier to advise	kPa(g)	Pressure drop	Supplier to advise ^{Note 3}		kPa(g)			
MATERIAL CONSTRUCTION FOR BODY/FLANGES									
Pressure carrying parts	Internals		Lining						
SS 304/304L Class 1500	SS 304/304L Class 1500		Carbon Steel						
End connection / Facing	Special drilling of flange connections								
Threaded	Supplier to advise								
Paint finish	Weather hood		O-ring Seal						
Supplier to advise	Supplier to advise		Supplier to advise						
Inspection / Documentation									
<input checked="" type="checkbox"/> Material certificate	<input checked="" type="checkbox"/> Work certificate			<input checked="" type="checkbox"/> Performance certificate					
REFERENCE DRAWINGS AND DOCUMENTS									
[1] ENS-FDP-PID-24005, PTFE Filter Destruction System P&ID Diagram - Gas Supply System 833									
[2] ENS-OWPVR-FDM-24001, Uranium Contaminated Waste Oil Plasma Gasification Basic Engineering Design: PFD(B5) - Gas Supply System									
[3] MES-PIPE-SPE-0017, Piping Material Specification Line Class LPVP, May 2024									
[4] ENS-FDP-CLC-24014, Mass Balance Calculation for the PTFE Filter Destruction System									
[5] ENS-FDP-CLC-24004, PTFE Filter Destruction Piping System Design Calculations - Line Sizing									

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ENGINEERING SERVICES DEPARTMENT			
FLAME ARRESTER SPECIFICATION SHEET			
Project		Unit Tag Number	
PTFE Filter Destruction Project		Y83352	
Datasheet Doc. No.		Revision	
ENS-FDP-SPE-24047		1.0	
NOTES			
Note 1: LPG is supplied from a cylinder bank containing 2 cascades, each with two 48 kg gas cylinders. The cylinder bank will be installed outside the laboratory area ^[2] . During operation, one cascade will be on-line, while the other is on standby. Each gas cylinder has a full pressure of 5 Bar(g) at 20°C.			
Note 2: This is the size of the schedule 40 pipeline in which the flame arrester will be installed.			
Note 3: Pressure drop across flame arrester to be minimized to facilitate control of gas supply pressure to downstream user.			
	Name	Signature & Date	
Compiled by	BM Khumalo, (Senior Process Engineer)	 Signed by: BM Khumalo, (Senior Process Engineer) Date: 15/05/2018	
Checked	MB Msane (Mechanical Engineer)	 Signed by: MB Msane, (Mechanical Engineer) Date: 15/05/2018	
Checked	M Correia (Senior Process Engineer)	 Signed by: M Correia, (Senior Process Engineer) Date: 15/05/2018	
Checked	G Manuel (Chief C&I Engineer)	 Signed by: G Manuel, (Chief C&I Engineer) Date: 15/05/2018	
Checked	S Mngoma (Chief Mechanical Engineer)	 Signed by: S Mngoma, (Chief Mechanical Engineer) Date: 15/05/2018	
Checked	W van den Berg (Chief Electrical Engineer)	 Signed by: W van den Berg, (Chief Electrical Engineer) Date: 15/05/2018	
Approved by	K Moodley (Chief Process Engineer)	 Signed by: K Moodley, (Chief Process Engineer) Date: 15/05/2018	
Distribution	1. ES Records 2. Dooan 3. Dr K Moodley 4. Mr D Ngwenya		

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ENGINEERING SERVICES DEPARTMENT
FLAME ARRESTER SPECIFICATION SHEET



Project	PTFE Filter Destruction Project		Unit Tag Number		Y83351	
Datasheet Doc. No.	ENS-FDP-SPE-24045		Revision		1.0	
Description	Flame arrester Y83351 is installed on the oxygen gas supply line 15-833-GSVP-064 to the Plasma Reactor R82018 in the PTFE Filter Destruction Facility ^[1] , downstream of the pressure regulator PCV83345B. Its function is to allow flow of oxygen but prevent the transmission of flame from a downstream source, in the event of ignition taking place.					
Plant Location	Necsa, Pelindaba, North-West Province					
Equipment Location	PTFE Filter Destruction Facility - Outside Laboratory-131, Building V-H2					
Safety Classification	SC-3(C) and Non-classified (N)					
Quality Classification	SC-3(C) and Non-classified (N)					
Storage tank (T1602) ^{[2], Note 1}						
Tank oxygen inventory/capacity	2496	kg liquid O ₂				
<input checked="" type="checkbox"/> Above ground	Diameter	1,3	m	Design pressure	Note 1	kPa(g)
<input type="checkbox"/> Buried	Height	2,5	m	Design vacuum	Note 1	kPa(g)
<input type="checkbox"/> Insulated	Wall thickness	Note 1	m	Pumping-in rate	Note 1	m ³ /h
<input type="checkbox"/> Ins. Thickness	Note 1		mm	Pumping-out rate at 25 °C & 600 kPa(g) ^{Note 3}	7,2	m ³ /h
Blanketed	Blanketing gas	N/A		Design standard	Note 1	
Stored product						
Component Name	Formula	Vol%	Mass%	Flashpoint °C	Haz. Group	MESG (mm) Ex-Gr
Oxygen	O ₂	>99	>99	N/A	2.2 (Non-Flammable Gas)	N/A N/A
Process information						
Design temperature	93 ^[6]	°C	Design pressure	20685 ^[6]	kPa(g)	
Operating temperature	Ambient		Operating pressure	600 ^[6]	kPa(g)	
			Back pressure	N/A	kPa(g)	
Installation						
<input checked="" type="checkbox"/> In-line	<input checked="" type="checkbox"/> Horizontal	Distance to source of ignition		4	m	
<input type="checkbox"/> End-of line	<input type="checkbox"/> Vertical	<input type="checkbox"/> Top of Tank/vessel				
Function						
<input type="checkbox"/> Pressure	<input type="checkbox"/> Endurance burning proof		<input type="checkbox"/> Temperature monitored			
<input type="checkbox"/> Vacuum	<input type="checkbox"/> Short term burning proof					
<input type="checkbox"/> Pressure & Vacuum	<input checked="" type="checkbox"/> Deflagration proof		<input type="checkbox"/> Pressure monitored			
<input checked="" type="checkbox"/> Flame arrester	<input checked="" type="checkbox"/> Detonation proof		<input type="checkbox"/> Bi-directional			
Flame arrester data						
Size nominal	15 ^{[3] Note 2}	mm	Flow	2,4 ^[5]	m ³ /h	Density 5,16 ^[4] kg/m ³
Pressure nominal	400	kPa(g)	Inlet flange type	Screwed female BSPT		
Adjusted set pressure	Supplier to advise	kPa(g)	Outlet flange type	Screwed female BSPT		
Adjusted set vacuum	Supplier to advise	kPa(g)	Pressure drop	Supplier to advise kPa(g)		
Material Construction for body / flanges						
Pressure carrying parts SS, 304/304L Class 1500	Internals SS, 304/304L Class 1500			Lining Carbon Steel		
End connection / Facing Threaded	Special drilling of flange connections Supplier to advise					
Paint finish Supplier to advise	Weather hood Supplier to advise			O-ring Seal Supplier to advise		
Inspection / Documentation (to be provided by supplier)						
<input checked="" type="checkbox"/> Material certificate	<input checked="" type="checkbox"/> Work certificate		<input checked="" type="checkbox"/> Performance certificate			

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ENGINEERING SERVICES DEPARTMENT



FLAME ARRESTER SPECIFICATION SHEET

Project	PTFE Filter Destruction Project	Unit Tag Number	Y83351
Datasheet Doc. No.	ENS-FDP-SPE-24045	Revision	1.0

REFERENCE DRAWINGS AND DOCUMENTS

- [1] ENS-FDP-PID-24005, PTFE Filter Destruction System P&ID Diagram - Gas Supply System 833
- [2] ENS-OWPVR-PID-24003, Uranium Contaminated Waste Oil Plasma Gasification Basic Engineering Design: P&ID - Gas Supply System (O₂ & Ar)
- [3] ENS-FDP-CLC-24004, PTFE Filter Destruction Piping System Design Calculations - Line Sizing
- [4] The Engineering ToolBox (2003). Gases - Densities and Specific Weight. [online] Available at https://www.engineeringtoolbox.com/oxygen-O2-density-specific-weight-temperature-pressure-d_2082.html [27/09/2024]
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NOTES

Note 1: The oxygen storage tank T1602 will be incorporated into a centralized gas supply system, outside the scope of the PTFE Filter Destruction Facility. The tank will be procured as a vendor package, i.e. a bulk liquid storage tank coming with the evaporator, necessary shutoff valves, regulator(s) and safety relief valve(s) to regulate the gas supply pressure at 600 kPa(g). The tank will be equipped with instrumentation indicating the pressure and liquid inventory in the tank. The specifications of this tank are still to be confirmed by the vendor. Therefore, the tank capacity/dimensions provided in this Sheet are only an estimate at this point.

Note 2: This is the size of the schedule 40 pipeline in which the flame arrester will be installed.

Note 3: This is the maximum flowrate coming out of the bulk storage tank. The maximum pump-out rate will be experienced when both PTFE and Waste Oil Plasma Gasification facilities are operated simultaneously.

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