
 中海油石化工程有限公司 CNOOC Petrochemical Engineering Co., Ltd.	控制系统扩容请购书 Requisition for Expansion of control system	版次 REV. C2	
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1 简介 Instruction

本请购书适用于江苏滨海液化天然气(LNG)项目槽车装车橇扩建工程控制系统扩容的询价采购。卖方所提供的产品应满足本请购书、请购数据表及所有引用附件的要求。任何异议、偏离和替代均应得到买方的书面认可。

This requisition is applicable to the inquiry procurement of Expansion of control system for the Jiangsu Binhai LNG Truck Loading Package Expansion Project. The products provided by VENDOR must meet the requirements of this requisition, requisition data sheet and all referenced attachments. Any ambiguity, deviations and substitutions shall be valid only if approved in writing by BUYER.

本规格书有中英文双语版本，如果发生冲突，则以中文为准。

This specification has both Chinese and English versions. In case there is conflict (or conflicts) between the corresponding contents of both versions, Chinese version shall prevail.

2 请购产品及数量 Purchase Products and Quantities

1、硬件部分：包含但不限于以下硬件设备，卖方应结合现有系统的配置，在此基础上对下表内容进行复核，如有缺项、漏项应进行补充，确保系统完整。

序号	名称	规格型号	单位	数量
1	DCS 增加卡件类型如下：			
1)	MODBUS 服务器	MOXA-5630	个	2
2)	AI/AO/DI/DO SIL3 浪涌保护器	IOP32	个	7
3)	AI 安全栅	MTL4541	个	7
4)	串行通讯模块	COM741-S01	个	2
2	SIS 增加卡件类型如下：			
1)	DO 卡件	SDO9010	个	2
2)	AI/AO/DI/DO SIL3 浪涌保护器	IOP32	个	21
3)	安全继电器	SIL3, SPDT*2, A@24VDC/3A@220VAC	个	32
4)	DB37 线（5m 黑 M-M）	LE37111-02	个	2
5)	数字量输出转接端子板（32 路）	TDO9010	个	1
3	GDS 增加卡件类型如下：			
1)	AI 卡件	SAI9020-H	个	2
2)	三线、四线制浪涌保护器	SD32T3(AIR-三线)	个	11
3)	AI/AO/DI/DO SIL3 浪涌保护器	IOP32	个	4
4)	AI 安全栅	MTL4541	个	5
5)	DO 浪涌保护器	IOPAC(DO(R)-220VAC))	个	6

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6)	HART 通讯模块安装底板	HTP-SC16	个	1
7)	HART 通讯模块安装底板	HTP-SC16	个	1
8)	DB37 线（5m 黑 M-M）	LE37111-02	个	2
9)	模拟量转接端子板（16 路）	TAI9020	个	1
4	FDS 增加卡件类型如下：			
1)	AI 卡件	SAI9020-H	个	2
2)	AI/AO/DI/DO SIL3 浪涌保护器	IOP32	个	4
3)	AI 安全栅	MTL4541	个	4
4)	HART 通讯模块安装底板	HTP-SC32	个	1
5)	HART 多路转换器通讯模块	MTL4850	个	1
6)	DO 浪涌保护器	IOPAC(DO(R)-220VAC))	个	6
7)	DB37 线（5m 黑 M-M）	LE37111-02	个	2
8)	模拟量转接端子板（16 路）	TAI9020	个	1
5	其他：			
1)	24V 电源浪涌	ZB4580	个	4
2)	220VAC 浪涌保护器	MA15/D/2/SI	个	10
3)	柜间电缆及端子	卖方确定（规格和一期一致）	批	1

2、软件部分


卖方除提供第1部分硬件要求外还需要完成系统的设计、集成、编程、组态、测试、包装、运输、售后服务和培训等要求。系统是一个“交钥匙”工程，卖方还应保证系统的功能技术、质量、交货时间和服务满足买方要求。

In addition to providing the hardware requirements specified in Part 1, the seller is also required to fulfill the requirements for system design, integration, programming, configuration, testing, packaging, transportation, after-sales service, and training. The system is a "turnkey" project, and the seller shall ensure that the system's functional technology, quality, delivery time, and service meet the buyer's requirements.

3 供货范围 Scope of Supply

卖方的供货范围应包括但不限于以下各项：VENDOR's scope of supply shall include, but not be limited to, the items listed below:

- 提供第2章提及的产品Supply products required in chapter 2
- 所有系统内部的电缆All cables within the system
- 卖方需提供以上系统扩容必须的适配器、空开、插头、端子、导轨、光纤、以太网电缆

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等所有附件 The seller needs to provide all necessary accessories for the system expansion, including adapters, air switches, plugs, terminals, guide rails, optical fibers, Ethernet cables, etc

- 提供组装、拆卸、维护可能使用的特殊工具 Supply any special tools required for assembly, disassembly and maintenance
- 提供安装、调试、开车及两年正常运行所需备件 Supply spare parts for installation, commissioning, start-up and 2-year operation
- 获取政府及相关部门许可、认证文件（包括有效日期） Obtain approval and certificate from government and related department (include effective date)

4 工作范围 Scope of Work

本请购书所附控制系统的技术规格书是订货合同的基础文件之一，经双方确认签字后可作为合同技术附件。


The technical specification for the control system attached to this purchase requisition is one of the basic documents of the order contract, and can serve as a technical annex to the contract after being confirmed and signed by both parties.

本项目为基于已有控制系统的扩容，各系统控制器利用已有的控制器，仅对新增信号的卡件进行增加及完成相应组态，同时在已有系统资料文件的基础上进行补充完善。供货商应根据这些基本要求配置和提供良好的项目技术交流服务，据此做出性能、价格最合适的报价。

This project involves the expansion of an existing control system. The system controllers utilize existing controllers, adding only the new signal cards and completing the corresponding configuration, while supplementing and improving based on the existing system documentation. The supplier should configure and provide excellent project technical communication services according to these basic requirements, and make the most suitable quotation in terms of performance and price accordingly.

系统供货商对所提供的硬件（包括所集成的其他设备）、软件、技术服务、工程服务、技术培训、软件组态、系统集成、包装运输、开箱检验、安装指导、现场测试、系统验收，直至整套系统运行等各个环节负有完全责任。系统供货商承担所有分包商和分供货商的责任。

The system supplier bears full responsibility for all aspects of the provided services, including hardware (including other integrated devices), software, technical services, engineering services, technical training, software configuration, system integration, packaging and transportation, unpacking inspection, installation guidance, on-site testing, system acceptance, and even the operation of the entire system. The system supplier assumes the responsibilities of all subcontractors and sub-suppliers.

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卖方在投标技术文件中所提供的控制系统的系统配置，无论是硬件、软件，都必须是完整的、无缺项的。无论何时发现缺项、漏项，卖方都必须无偿补足。

The system configuration of the control system provided by the supplier in the bidding technical documents, whether it is hardware or software, must be complete and free of omissions. Whenever any omissions or missing items are discovered, the supplier must make up for them free of charge.

买方对投标文件的确认并不能免除或减轻卖方的责任。

The confirmation of the bidding documents by the tenderer does not exempt or mitigate the responsibilities of the supplier.

供货商应保证最终投标技术文件中的条款、技术规格、数字等内容的前后完整性和一致性，如果出现前后不一致或互相矛盾之处，原则上以对买方有利的条款、技术规格、数字为准。

The supplier shall ensure the completeness and consistency of the terms, technical specifications, figures, and other content in the final bidding technical documents. In the event of any inconsistencies or contradictions, the terms, technical specifications, and figures that are beneficial to the buyer shall prevail in principle.


5 引用附件 Referenced Attachments

- JSLNG-DD-RPT-TS-COM-05001002 项目设计基础
- JSLNG-DD-SPC-TS-COM-05001003 供货商文件编码规定
- JSLNG-DD-RPT-TS-COM-05001003 重要性能等级划分报告
- JSLNG-DD-SPC-TS-COM-05001002 质量控制要求
- JSLNG-DD-LIST-TS-IN-05001003 控制系统(DCS)IO表
- JSLNG-DD-LIST-TS-IN-05001004 控制系统(SIS)IO表
- JSLNG-DD-LIST-TS-IN-050010053 控制系统(GDS)IO表
- JSLNG-DD-DWG-TS-IN-05001008 控制系统配置图
- JSLNG-DD-LIST-TS-CO-05001002 槽车装车撬扩建工程FDS IO表

6 冲突 Confliction

本请购书、请购数据表、引用附件、标准规范之间有冲突或矛盾时，卖方应以书面形式及时通知买方，以买方书面澄清确认的意见为准，否则以对买方有利的条款、技术规格、数字为准。

Any confliction between this requisition, requisition data sheet, referenced attachments and codes & standards shall be informed to BUYER formally in writing. The opinions confirmed in writing by

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BUYER shall prevail. Otherwise, the terms, technical specifications, or numbers favorable to BUYER shall prevail.

技术要求的优先次序如下：The Order of Priority for Technical Requirements:

- 1) 中国强制法律、法规Compulsory laws and regulations of China
- 2) 技术澄清Technical clarification
- 3) 招标文件Bidding document
- 4) 本请购书This requisition
- 5) 其他引用附件Other referenced attachments
- 6) 标准和规范Codes & Standards

7 偏离 Deviation

卖方的报价应严格满足买方的各项要求。

VENDOR's quotation shall be in strictly complied with BUYER's requirements.

除非卖方以偏差表的形式，书面逐条说明所发生的偏差，否则卖方报价被视为完全满足买方要求。卖方在说明偏差的同时，应同时说明由此偏差所引发的对价格和交货时间的影响。

Any deviation to any applicable specification shall be clearly described by VENDOR within its proposal, otherwise VENDOR quotation is considered fully meet the requirements of BUYER. VENDOR must fill the form of deviation list and state the impact on the price and delivery time caused by the deviation.

详细的现场条件见“项目设计基础”。

The detail should be referenced in the “Basic Engineering Design Data”.

8 技术要求 Technical Requirements


为保证系统的可用性和安全性，卖方提供的卡件规格型号需严格按第2章要求的提供。相应的技术参数不低于已有系统的配置。

To ensure the availability and safety of the system, the specifications and models of the cards provided by the seller must strictly adhere to the requirements outlined in Chapter 2. The corresponding technical parameters should not be inferior to the configuration of existing systems.

9 现场技术服务 Field Technical Service

9.1 现场安装 Field Installation

现场卡件、各类配件及连线的安装由卖方负责。

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The installation of on-site cards, various accessories, and wiring is the responsibility of the seller.

9.2 系统通电 System Energized

卡件在现场安装、接线完毕后，系统通电由卖方的技术人员负责，通电前由卖方的技术人员检查系统的安装、接线、电源及接地等情况，然后通电启动。

After the cards are installed and wired on site, the system power-on is the responsibility of the seller's technical personnel. Before power-on, the seller's technical personnel will inspect the system's installation, wiring, power supply, and grounding conditions, and then initiate the power-on process.

9.3 联调试运 Joint Commissioning And Trial Operation

装置开工前，由卖方派有经验的应用工程师到现场指导，协助用户对系统与工艺过程进行联调试运，使系统各部分处于正常工作状态，完整地投入运行。卖方在装置开工前完成本请购书所要求负责的DCS与其他系统（例如：槽车装车系统）的通讯调试。联调试运后，可进行现场验收。

Before the unit starts operation, the seller shall send experienced application engineers to the site for guidance and assistance in joint commissioning and operation of the system and process, ensuring that all parts of the system are in normal working condition and fully operational. The seller shall complete the communication commissioning between the DCS and other systems (such as the tanker loading system) required in this purchase requisition before the unit starts operation. After joint commissioning and operation, on-site acceptance can be carried out.

9.4 系统投运 System Commissioning

装置开工期间，卖方派有经验的应用工程师到现场指导，使系统投入运行并保证开工期间系统工作正常。

During the startup of the device, the seller shall dispatch experienced application engineers to the site for guidance, ensuring the system is put into operation and functioning properly during the startup period

9.5 开车运行后一年现场技术服务 On-site Technical Service For One Year After The System Is Put Into Operation

在工作系统移交后，卖方应提供开车运行后一年的现场技术服务。

After the handover of the working system, the seller shall provide on-site technical services for one year after the system is put into operation.

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9.6 服务费用 Service Fee

投标技术文件应对以上现场技术服务分别列出推荐的人员、工时及费用。

The technical bidding documents should separately list the recommended personnel, working hours, and expenses for the above on-site technical services.

由于卖方或系统故障等原因造成现场服务时间加长，其增加的费用由卖方自行负责。

If the on-site service time is extended due to reasons such as seller or system malfunctions, the additional costs incurred shall be borne by the seller.

10 售后服务与维修 After-sales Service And Maintenance

10.1 保修 Warranty

从发货之日起18个月内或系统投入运行1年内（以时间短者为准），如发现供货商提供的系统有任何质量或功能问题，供货商应免费调整、更换。

Within 18 months from the date of shipment or within 1 year after the system is put into operation (whichever is shorter), if any quality or functional issues are found with the system provided by the supplier, the supplier shall make adjustments or replacements free of charge

10.2 备件支持 Spare Parts Support

为保证系统99.99%的可利用率，供货商应在中国境内方便的地点设置备件库，存放所有必需的备件，并保证从系统开车投运开始15年以上的可供应期（或停止生产后10年）。

To ensure a 99.99% availability rate of the system, the supplier should establish a spare parts warehouse in a convenient location within China, stocking all necessary spare parts, and guarantee a supply period of over 15 years from the start of system operation (or 10 years after production ceases)

10.3 维护能力 Maintenance Capability

供货商应说明距买方最近的维修服务机构，并保证如下：

The supplier shall indicate the nearest maintenance service facility to the buyer and guarantee the following:

- a) 经正式培训的工程师。
- a) A formally trained engineer.
- b) 24小时内快速响应到达现场。
- b) Respond quickly and arrive at the scene within 24 hours.
- c) 可以在现场培训操作人员。

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c) Operators can be trained on-site.

d) 库存备件品种和数量。

d) Types and quantities of spare parts in stock.

e) 场安装指导和试运协助能力。

e) Ability to provide on-site installation guidance and assistance during trial operation.

还应说明保修期以外的人工时费用。

The labor cost beyond the warranty period should also be specified.

10.4 硬件/软件更新 Hardware/Software Updates

供货商必须保证系统投入运行时的硬件、软件为最新版本，并在系统开车投运后的15年备件供应期内提供系统软件和应用软件的技术支持。

The supplier must ensure that the hardware and software are at the latest version when the system is put into operation, and provide technical support for system software and application software during the 15-year spare parts supply period after the system is put into operation.

11 设计协调和联络 Design Coordination and Liaison

合同签订后，如果买方要求，卖方应派遣一定数量的、有资质的技术人员与买方进行设计协调和联络。

After the signing of the contract, if requested by BUYER, VENDOR should send a certain number of qualified technical staff for design coordination and liaison with BUYER.


12 卖方资料要求 VENDOR's Documents Requirements

卖方应按计划分批提交带有版次说明及修改记号的卖方资料，买方将在规定时间内加以确认和批准，直到最终文件，买方的确认和批准均不能解除卖方的责任。VENDOR shall submit VENDOR's documents with revision instructions and modification marks in batches according to the schedule. BUYER will confirm and approve them within the specified time, up to the certified final, and neither confirmation nor approval by BUYER shall relieve VENDOR's responsibility.

所有卖方资料的图幅尽量采用A4，最大不超过A3。VENDOR's document map sheet maximize the use of A4, maximum of not more than A3.

所有卖方资料使用语言为中文或中、英文对照。All VENDOR's documents shall be in both Chinese and English.

电子版文档采用PDF格式。The electronic version of the document in PDF format.

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A类：报价用图纸和资料。投标方应投标线上扫描件传递。Type A: For quotation. The Bidder shall transmit scanned copies online for bidding.

B类：审核用图纸和资料。合同签订后2周，卖方应提供8份纸质版，2份电子版PDF格式文档。Type B: For review. VENDOR shall submit 8 hard copies and 2 copies in PDF format in two weeks after signing the contract.

C类：存档用图纸和资料。买方最终审查意见返回后2周，卖方应提供8份纸质版，2份电子版PDF格式文档。Type C: For filing. Once review comments are returned by BUYER, VENDOR shall submit 8 hard copies and 2 copies in PDF format in two weeks.

D类：装箱资料。发货时卖方应随产品提供8份纸质版，2份电子版PDF格式文档。Type D: with the shipment. VENDOR shall submit 8 hard copies and 2 copies in PDF format with the delivery.

*注：由买方根据实际需要，决定卖方提交的资料。*Note: Any document should be decided by BUYER in accordance with the project requirement.

资料至少应包括：

- a) 系统总说明书、配置图；
- a) Overall system specification and configuration diagram;
- b) 输入输出卡件及接线端子布置图、接线图；
- b) Layout and wiring diagrams for input/output cards and terminal blocks;
- c) 系统供电及接地图；
- c) System power supply and grounding diagram;
- d) 系统内部电缆接线图，端子接线图；
- d) System internal cable wiring diagram, terminal wiring diagram;
- e) 远程I/O卡件接线端子布置图、接线图。
- e) Layout and wiring diagram of terminal blocks for remote I/O cards.
- f) 仪表双线回路图（带接线端子号和回路）。
- f) Instrument two-wire loop diagram (with terminal block numbers and loops).
- i) 从软硬件、施工、安全、计划等多个角度描述的扩容实施方案。
- i) The expansion implementation plan described from multiple perspectives, including software and hardware, construction, safety, and planning.

13 偏差表 Deviation List

文件号 Doc. No.	请购要求条款 Paragraph No.	偏离内容 Deviation		偏离是否对费用产生影响 Cost Effect When Deviation Applied
		原文摘要 Original Article	修改或删除意见 Amended/Deleted Article	

14 现场培训和服务表 Site Training and Assistance List

名称 Name	描述 Description		备注 Remarks
	动员和遣返旅行天次 Mob and Demob. travel day rate	现场人工日（人天） Daily rate on site (Men-day)	
现场培训 Site training			
现场技术服务 Site technical assistance			

现场试验期间，卖方应免费为买方提供8~10人，时间2~3天的现场培训。

During the field test, VENDOR shall provide BUYER with 8 to 10 people for free, and 2 to 3 days of on-site training.

15 工具表 Tools List

卖方应提供产品安装和维修必备的专用工具，和安装、检验和调试必备的特殊仪器。

VENDOR shall supply special tools necessary for installation and maintenance, and special instruments necessary for installation, inspection and commissioning.

名称 Name	规格及型号 （材料） Spec. and Model (Material)	图号（零件序号） DWG. No.(Part No.)	简图 Sketch	数量Quantity		备注 Remarks
				单台设备 需要数量Per Equipment	卖方提供 总数量Total Supplied By VENDOR	
专用工具 Special tools						
特殊仪器 Special instruments						

16 备品备件表 Spare Parts List

卖方应提供下表1的备品备件，下表1是最低要求，卖方还应根据产品需要和自身经验来补

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充提供施工及试车、一年运行的其他的必需的备品备件、易损备件和消耗品。

卖方如果不再生产合同产品范围内的配件，必须提前一年通知用户，以协助用户储备足够量的备件，满足产品维护的需要。

卖方应承诺用户在质保期内/外需购买的备件价格不高于原产品合同中相应的价格。

表1 施工试车及一年备品备件

序号	名称	数量	备注
1			
2			