



INSTITUTE OF LIFE SCIENCES

(An autonomous Institute of the Department of Biotechnology, Govt. of India)

Nalco Square, Bhubaneswar-751 023

Website: www.ils.res.in

NIT No- VIII/177 /MF/2021-22 / 1672 /ILS

Dt.13.07.2022

E-TENDER DOCUMENT

Name of work: Construction of tensile fabric car parking shed at ILS campus-I

Total Estimated Cost: Rs. 16,64,958.00

EMD: Rs 33,300.00

**Administrative Officer
For and on behalf of Director, ILS.**

INDEX

Sl. No.	Details	Page From	-	To
01.	Cover page	01	-	01
02.	Index	02	-	02
<u>PART-A.</u>				
03.	Information and Instructions to bidders for e-tendering	03	-	06
04.	E-Tendering Instructions to bidders	07	-	10
05.	Formats	11	-	12
06.	Price Bid	13	-	14

The D.N.I.T. contains 14 (Fourteen) pages only.

The Director, Institute Of Life Sciences, Bhubaneswar invites e-tenders (2 bid system) from **established civil agencies / contractors** of appropriate class of Public Works Organizations like CPWD, DOP, MES, Railways and State PWD (R&B) of Odisha for the following work.

S. No.	Description	Details
i)	NIT No.	VIII/177/MF/2021-22 / 1672 /ILS Dt.13.07.2022
ii)	Name of Work:	Construction of tensile fabric car parking shed at ILS campus-I
iii)	Estimated Cost	Rs. 16,64,958.00
v)	Period of Completion	One month
vi)	Last date and time of online submission of tender	15.00 hours on 05. 08.2022
vii)	Time and date of online opening of Documents	15.30 hours on 05. 08.2022
viii)	Time and date of opening of Online Financial Bids	To be intimated latter
ix)	Period during which hard copies of EMD, Registration Certificates, Undertaking and other Documents to be submitted to Division office	Rs 33,300/- To be submitted during office on or Before the online submission of tender. (i.e 05.08.2022 at 15:00)
X)	Validity of tender	Three months w.e.f date of NIT

1. The intending bidder must read the terms and conditions of Tender document carefully. He should submit his bid if he considers himself eligible and he is in possession of all the certificates/ documents required.
2. Information and Instructions for bidders for e-tendering posted on website shall form part of bid document.
3. The bid document consisting of NIT, plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from [http:// www.tenderwizard .com/ILS](http://www.tenderwizard.com/ILS) or www.ils.res.in Or www.eprocure.gov.in at free of cost.
4. For e-tendering of this tender, ILS has engaged e-portal maintained by M/s ITI Limited, Bhubaneswar. Intending bidders shall have to register with M/s ITI Limited, Bhubaneswar to participate in the tendering process. For details kindly visit website <http://www.tenderwizard.com/ILS> or contact Shri SANJIB MOHAPATRA (Mobile No. 9937488749 or 7377708585). If needed they can be imparted training on online bidding process as per details available on the website.
5. The intending bidders must have valid class-III digital signature to submit the bid.
6. The bid can be submitted only after depositing e-tender Processing Fee (Online through e-Payment) in favour of ITI Limited within the period of bid submission. **E-tender processing fee is non-refundable.**
7. Copies of eligibility documents and EMD as specified in the notice inviting tender shall be scanned and uploaded on the e-tendering website within the period of tender submission. Bidders can upload documents in the form of JPG format, PDF format and any other format as permissible by the e-tendering portal.
8. Bidders must ensure to quote rate of each item. The column meant for quoting rate in figures appears in dark yellow colour and the moment rate is entered, it turns sky blue. In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "0". Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as "0"

(ZERO).After submission of the bid online the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.

9. After submission of bid online, it can be revised any number of times before specified time on last date of submission of bid. While submitting the revised bid, bidder can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
10. Financial bids shall be opened online only for bidders for whom EMD and other documents are found in order and who are found to be eligible to bid for work. On opening date, the bidder can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
11. If the contractor is found ineligible after opening of bids, his bid shall become invalid.
12. If any discrepancy is noticed between the eligibility documents as uploaded at the time of submission of bid and hard copies as submitted physically by the bidder, the bid shall become invalid and.

List of eligibility Documents to be scanned and uploaded online & Offline within the period of bid submission:

- a) The contactors who are interested to participate in the tender shall furnish Scan copies of their Registration Nos. / Trade License No., GST No. & pan card.
- b) The Bidders are required to deposit the **EMD @ Rs 33,300.00** in shape of demand draft in favour of **Institute of Life Sciences – DBT from any statutory Bank.**
- c) List of similar works completed last five years, duly supported by completion certificate issued by the competent authority. Similar works mean one no. of construction of building / renovation / shed work etc. to Rs 13.00 lakh. Or two similar works each costing not less than Rs 7.00 lakh during last three years. The contractors are required to give details of such work in standard Performa enclosed at annexure – II..
- d) Copies of **partnership deed in case of partnership firms/ memorandum of articles of association and power of attorney or authorization to the person who signs the tender in case of companies,**

The entire above offline document must be received in sealed envelope & must be either delivered by hand or posted at the following address so as to reach not later than the last date/time specified in the NIT to **DIRECTOR INSTITUTE OF LIFE SCIENCES, NALCO SQUARE, BHUBANESWAR-23.** The name and mailing address of the Applicant (bidder) shall be clearly marked on the envelopes. **Bids received late i.e. after the due date and timing for receipt of bids shall not be accepted/considered for evaluation and such bids shall be returned unopened.**

Terms & Conditions :

The tender shall be submitted in Two Bid systems.

- (i) **Technical Bid:** All required documents submitted to be online & offline.
- (ii) **Financial Bid:** The Financial Bid in online excel format only. The bidders, who qualify at Technical Bid Evaluation, will be opened thereafter.
- (iii) **Manual Submission of Following Documents:**

The following documents are to be sent to **DIRECTOR, INSTITUTE OF LIFE SCIENCE, NALCO SQUARE, BHUBANESWAR, 751023**, separately in a sealed envelope superscripted as: e-Tender for (Name of Work) The sealed envelope should be reached on or before the last date & time of submission of e-Tender. i.e before the due date of submission of online bidding.

- b) The contactors who are interested to participate in the tender shall furnish Xerox copies of their Registration Nos. / Trade License No., GST No. & pan card.
- b) The Bidders are required to deposit the EMD @ Rs 33,300.00 in shape of demand draft in favour of Institute of Life Sciences – DBT from any statutory Bank. .
- c) List of similar works completed last five years, duly supported by completion certificate issued by the competent authority. Similar works mean one no. of construction of building / renovation / shed work etc. to Rs 13.00 lakh. Or two similar works each costing not less than Rs 7.00 lakh during last three years. The contractors are required to give details of such work in standard Proforma enclosed at annexure – II..
- d) Copies of **partnership deed in case of partnership firms/ memorandum of articles of association and power of attorney or authorization to the person who signs the tender in case of companies,**

A. EARNEST MONEY DEPOSIT (EMD)

A.1 - The Bidders are required to deposit the EMD in favour of **Director, ILS** for **Rs.33,300.00 /- (Rupees Thirty Three Thousand Three Hundred only)**

Work in following forms only.

a. Demand Draft in favour of **DIRECTOR, INSTITUTE OF LIFE SCIENCES** and payable at **BHUBANESWAR** drawn on any Indian Scheduled Bank in a separate envelope super- scribing “EMD”

Work in following forms only.

A.2 - EMD in any other form shall not be accepted.

A.3 - ILS shall summarily reject any bid not accompanied by the EMD as mentioned above.

A.4 - After evaluation of financial bids, the EMD of unsuccessful bidders will be returned
Within a month from the end of the tender validity period.

A .5 - The EMD of the successful bidder will be retained as part of the security deposit.

A .6 - The EMD of the bidder, whose Technical bid is found not acceptable, will be returned as soon as scrutiny of Technical bid has been completed.

A .7 - No interest shall be paid on the EMD.

B. VALIDITY OF BID

B.1 - Bids shall remain valid and open for acceptance for a period of 30 **(Thirty) days** from the date of opening of Technical Bid. Should the bidder fail to keep the bid open for acceptance as stated above or if the bidder withdraws his bid before the expiry of the said period or makes any modification in terms and conditions of the bid which are not acceptable then ILS without prejudice to any other right or remedy shall be at liberty to forfeit his 50% EMD absolutely.

B.2 - In exceptional circumstances, prior to expiry of the original validity period, ILS may request the bidders for an extension in the period of validity by no of days as may be required. The request and the responses thereto shall be made in writing or by cable or fax. A bidder may refuse the request without forfeiting his EMD. A bidder agreeing to the request will neither be required nor be permitted to modify his bid but will be required to extend the validity of his EMD correspondingly.

C. SUBMISSION AND OPENING OF BIDS:-

Tender should Open & submitted through Online only in the web portal www.tenderwizard.com/ILS

D. Terms and conditions: -

1. The successful bidder (**L-1 bidder**) will have to provide a **security deposit @ 5% of tender value (In the in shape of demand draft in favour of Institute of Life Sciences – DBT from any statutory Bank)** to ILS at the time of receiving work order. The Earnest Money deposited will be adjusted as part of the total security deposit required. The security deposited shall be released on vendors request after completion of warranty period i.e 6 months with effect from completion date without any interest to it.
2. The work will be executed based on the specification as stated in the tender document.
3. The contactors who are interested to participate in the tender shall furnish Xerox copies of their Registration Nos. / Trade License No., GST No. & pan card.
4. **The work should be started within 7days after receiving of work order and should be completed within one month from the date of issue of work order.** Otherwise, penalty @ 1% of tender value will be levied to the Contractor per week of delay (excluding natural calamities, it should be intimated to competent authority.)
5. No extension of time will be allowed, if the above work is not completed within the stipulated time. ILS reserves the right to get it completed through any other source without sending any intimation to the contractor.
6. After completion of the work the Contractor shall clean the site and remove debris from the site to outside of ILS.
7. The Contractor shall abide by the laws of the land for payments to labourers etc.
8. The payment shall be made after successful completion of the work as per the actual measurement of the work done confirming to specification and design , drawing etc. as per NIT term & condition.
9. Income Tax, Sales Tax, etc. shall be deducted from the payment to be made to the Contractor as per the existing law.
10. In case of extra items (not provide in BOQ), same item will be paid as per DSR considered for the NIT.

11. The court situated at Bhubaneswar shall have jurisdiction to decide any dispute or litigation, if arises in future beyond the above mentioned rules & regulations

E-TENDERING INSTRUCTIONS TO BIDDERS

General:

The Special Instructions (for e-Tendering) supplement 'Instruction to Bidders', as given in this Tender Document. Submission of Online Bids is mandatory for this Tender. E-Tendering is a new methodology for conducting Public Procurement in a transparent and secured manner. Suppliers / Vendors will be the biggest beneficiaries of this new system of procurement. For conducting electronic tendering, ILS BHUBANESWAR has decided to use the portal www.tenderwizard.com/ILS through an ASP, M/s. ITI Ltd., Bhubaneswar.

Instructions:

1. Tender Bidding Methodology:

Two Stage Online Bidding

2. Broad outline of activities from Bidders prospective:

1. Procure a Class III Digital Signature Certificate (DSC)
2. Register on the e-Procurement portal www.tenderwizard.com/ILS
3. Create Users on the above portal
4. View Notice Inviting Tender (NIT) on the above portal
5. Download Official Copy of Tender Documents from the above portal
6. Seek Clarification to Tender Documents on the above portal. View response to queries of bidders, posted as addendum, by ILS
7. Bid-Submission on the above portal.
8. Attend Public Online Tender Opening Event (TOE) on the above portal - Opening of Technical Part
9. Post-TOE Clarification on the above portal (Optional) – Respond to ILS's Post-TOE queries.
10. Attend Public Online Tender Opening Event (TOE) on the above portal - Opening of Financial Part (Only for Technical Responsive Bidders)

For participating in this tender online, the following instructions are to be read carefully. These instructions are supplemented with more detailed guidelines on the relevant screens of the above portal.

3. Digital Certificates:

For integrity of data and authenticity / non-repudiation of electronic records, and to be compliant with IT Act 2000, it is necessary for each user to have a Digital Certificate (DC), also referred to as Digital Signature Certificate (DSC), of Class III, issued by a Certifying Authority (CA) licensed by Controller of Certifying Authorities (CCA) [refer <http://www.cca.gov.in>].

4. Registration:

To use the Electronic Tender portal www.tenderwizard.com/ILS, vendors need to register on the portal. Registration of each organization is to be done by one of its senior persons vis-à-vis Authorised Signatory who will be the main person coordinating for the e-tendering activities. In the above portal terminology, this person will be referred to as the Super User (SU) of that organization. For further details, please visit the website/portal, and follow further instructions as given on the site. Pay Annual Registration Fee as applicable. (Rs 2000+ GST as applicable)

Note: After successful submission of Registration details and Annual Registration Fee, please contact to the Helpdesk of the portal to get your registration accepted/activated.

1. The Bidder must ensure that after following above, the status of bid submission must become – “Submitted”.
2. Please take due care while scanning the documents so that the size of documents to be uploaded remains minimum. If required, documents may be scanned at lower resolutions say at 150 dpi. However it shall be sole responsibility of bidder that the uploaded documents remain legible.
3. It is advised that all the documents to be submitted are kept scanned or converted to PDF format in a separate folder on your computer before starting online submission.
4. The Financial part/BOQ may be downloaded and rates may be filled appropriately. This file may also be saved in a folder on your computer. Please don't change the file names & total size of documents (Preferably below 5 MB per document) may be checked.

Bid submission

The entire bid-submission would be online on the Tender wizard portal i.e. <https://www.tenderwizard.com/ILS>

Broad outline of submissions are as follows:

- (i) Submission of Bid Parts (Technical & Financial)
- (ii) Submission of information pertaining to Bid Security/ EMD.
- (iii) Submission of signed copy of Tender Documents/Addendums.

The TECHNICAL PART shall consist of Electronic Form of Technical Main Bid and Bid Annexure. Scanned/Electronic copies of the various documents to be submitted under the Eligibility Conditions, offline submissions, instructions to bidders and documents required to establish compliance to Technical Specifications and Other Terms & Conditions of the tender are to be uploaded.

The FINANCIAL PART shall consist of Electronic Form of Financial Main Bid and Financial Bid Annexure, if any. Scanned copy of duly filled price schedule (Section VII) for both packages are to be uploaded. If required, additional documents in support of taxes, quoted duties etc. may also be uploaded.

Tender Processing Fee:-

You pay processing fee (0.1% of ECV + GST as applicable (Min. 500/- & Max 5000/- + GST as applicable)) through online (Credit card/ Debit card/ Net Banking), when participating in the e-tender.

Offline Submissions:

The bidder is requested to submit the as above mentioned documents offline **DIRECTOR, INSTITUTE OF LIFE SCIENCE, NALCO SQUARE, BHUBANESWAR, 751023** on or before the date & time of submission of bids specified in covering letter of this tender document, in a Sealed Envelope. The envelope shall bear (name of the work), the tender number and the words 'DO NOT OPEN BEFORE' (due date & time).

Public Online Tender Opening Event (TOE)

The e-Procurement portal offers a unique facility for 'Public Online Tender Opening Event (TOE). Tender Opening Officers as well as authorized representatives of bidders can attend the Public Online Tender Opening Event (TOE) from the comfort of their offices. For this purpose, representatives of bidders (i.e. Supplier organization) duly authorized. Every legal requirement for a transparent and secure 'Public Online Tender Opening Event (TOE)' has been implemented on the portal. As soon as a Bid is decrypted, the salient points of the Bids are simultaneously made available for downloading by all participating bidders. The medium of taking notes during a manual 'Tender Opening Event' is therefore replaced with this superior and convenient form of 'Public Online Tender Opening Event (TOE)'. The portal a unique facility of 'Online Comparison Statement' which is dynamically updated as each online bid is opened. The format of the Statement is based on inputs provided by the Buyer for each Tender. The information in the Comparison Statement is based on the data submitted by the Bidders. A detailed Technical and / or Financial Comparison Statement enhance Transparency. Detailed instructions are given on relevant screens. The portal has a unique facility of a detailed report titled 'Online Tender Opening Event (TOE)' covering all important activities of 'Online Tender Opening Event (TOE)'. This is available to all participating bidders for 'Viewing/Downloading'. There are many more facilities and features on the portal. For a particular tender, the screens viewed by a Supplier will depend upon the options selected by the concerned Buyer.

Important Note: In case of internet related problem at a bidder's end, especially during 'critical events' such as – a short period before bid-submission deadline, during online public tender opening event it is the bidder's responsibility to have backup internet connections. In case there is a problem at the e-procurement / e-auction service-provider's end (in the server, leased line, etc) due to which all the bidders face a problem during critical events, and this is brought to the notice of ILS by the bidders in time, then ILS will promptly reschedule the affected event(s).

Other Instructions

For further instructions, the vendor should visit the home-page of the portal. The complete help manual is available in the portal for Users intending to Register / First-Time Users, Logged-in users of Supplier organizations. Various links are also provided in the home page.

Important Note: It is strongly recommended that all authorized users of Supplier organizations should thoroughly peruse the information provided under the relevant links, and take appropriate action. This will prevent hiccups and minimize teething problems during the use of the said portal.

The following 'FOUR KEY INSTRUCTIONS for BIDDERS' must be assiduously adhered to:

1. Obtain individual Digital Signature Certificate (DSC) well in advance of your first tender submission deadline on the portal.
2. Register your organization on the portal well in advance of your first tender submission deadline on the portal
3. Get your organization's concerned executives trained on the portal well in advance of your first tender submission deadline on the portal
4. Submit your bids well in advance of tender submission deadline on the portal (There could be last minute problems due to internet timeout, breakdown etc.)

While the first three instructions mentioned above are especially relevant to first-time users on the portal, the fourth instruction is relevant at all times. Minimum Requirements at Bidders end Computer System with good configuration (Min P IV, 1 GB RAM, Windows 7) Broadband connectivity. Microsoft Internet Explorer 8.0 or above. Digital Certificate(s) Vendors Training Program Necessary training to each and every registered bidder under this portal shall be impacted by the ASP, M/s. ITI, Bhubaneswar, if required, before participation in the online tendering.

For any further assistance, please contact Mr Sanjeeb Mahapatra (07377708585), Helpdesk-080-45811365/080-40482000 ITI email ID for mailing communication:- twhelpdesk404@gmail.com / twhelpdesk680@gmail.com/ twhelpdesk605@gmail.com

FORM OF AGREEMENT

(To be executed on non-judicial stamp paper of Rs.100/-)

Agreement No. _____

Da ted _____

THIS AGREEMENT is made on _____ day of _____ (month), ____ (year) between ILS., AN AUTONOMOUS INSTITUTE OF THE DEPARTMENT OF BIOTECHNOLOGY, GOVT. OF INDIA hereinafter called ILS, (which expression shall, wherever the context so demands or requires, includes their successors in office and assigns) on the one part and M/s. _____ hereinafter called the Contractor (which expression shall wherever the context so demands or requires, include his/their successors and assigns) on the other part. WHEREAS the ILS is desirous that certain works should be executed viz. (brief description of the work)..... and has by Letter of Acceptance dated _____ accepted the tender submitted by the contractor for the execution, maintenance and completion of such works at a total contract price of Rs.---- - (Rupees-----only).

Now THIS AGREEMENT WITNESSETH as follows:

1. In this agreement, words and expressions shall have the same meaning as are respectively assigned to them in the conditions of contract hereinafter referred to.
2. The following documents in conjunction with Addendum/ Corrigendum to Bid Documents shall be deemed to form and be read and construed as part of the agreement viz:
 - a. This Form of Agreement
 - b. The Letter of Award dated _____
 - c. Priced Schedule (Bill) of Quantities
 - d. Notice Inviting Tender and Instructions to bidders-
3. The aforesaid documents shall be taken as complementary and mutually explanatory of one another, but in the case of ambiguities or discrepancies, shall take precedence in the order set out above.
4. The ILS hereby covenants to pay to the contractor in consideration of the execution , completion of work at contract price at the time and in the manner prescribed by the contract.

In WITNESS whereof the parties hereto have caused their respective common seals to be here into affixed (or have herewith set their respective hands and seals) the day and year first above written.

SIGNED, SEALED AND DELIVERED BY

M/S. _____ (for contractor) _____ (for ILS)

In the capacity of _____ in the capacity of _____

On behalf of Contractor

On behalf of ILS

In the presence of in the presence of

1. _____ 1. _____

2. _____ 2. _____

Annexure – II

List of similar works completed during last 5 years.

Sl no.	Clients name and address with contact number	Name of the work.	Scope of work	Agreement / Letter of Award No.	Contract Value (Rs. In lakh)		Location	Date of start	Date of completion		Ref to Supporting Documents submitted by bidder
					Awarded	Actual			As per LOA	Actual	
1	2	3	4	5	6	7	8	9	10	11	12

Note-1: The bidder shall produce an attested copy of the referred completion certificate from the owner companies indicating name of work, description of work done by the bidder, date of start, date of completion(contractual & actual including extensions if any), value of material supplied free of cost by the client. When the owner company is private one, the certificate from the company must be supported by TDS certificate issued by the company. The bidder should be in position to produce original certificate if required.

Note-2: ILS reserves the right to cross checks the certificate(s) directly with the issuing authority /authorities/clients or any other firm/ party.

Note-3: Information must be furnished on only works carried out by the bidder in his firm’s own name. Works carried out as a partner in joint venture shall not be included in this Performa.

Note-4: The bidder shall number the page of the documents submitted by him against Pre-qualification requirements/Criteria and such reference number of relevant completion certificate(s) against completed work(s) if any shall be indicated under Column.no.11 of above table.

Signature of Authorised Representative of the bidder.....
Bidder’s Stamp-----

Name of the work: Construction of tensile fabric car parking shed at ILS campus-I

Sl. No.	Description of items	Unit	Quantity	Rate	Amount
1	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead up to 50 m and lift up to 1.5 m, as directed by Engineer-in charge. All kinds of soil	Cum	35.00		
2	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand (zone-III) derived from natural sources : 8 graded stone aggregate 40 mm nominal size derived from natural sources)	Cum	1.50		
3	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	Cum	17.00		
4	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to plinth level. Cold twisted bars	Kg	250.00		
5	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer and paint including welding and bolted with special shaped washers etc. complete. Hot finished welded type tubes	Kg	4100.00		
6	Tensile fabric roofing excluding foundation work and steel work inbuilt of tubular truss Including chemical fastener, shackles, ringing screw clamps tensioning hardware etc. of approved brand and make complete as per direction of engineer in charge tensile fabric should be of specification as under, (Serge Ferrari, France) or equivalent with Both. Side PVDF Coat technical properties (5 %variation acceptable) Yarn: 1100 dtex PESHT CR treatment Weight. : 750. G/SQM Width. 267. cm-105. inch Tension strength: 3000/ 2800 N/sqcm. (WRAP. WEFT) Tear resistance 300N (WRAP WEFT) Adhesion. : 120N/5cm	Sqft.	2150.00		

	Surface treatment formula weldable Fluorinated. Varnish Light. Transmission 13.50% Flame ret ardency: M2/NFP92-507CSFM T119, B1/DIN4102				
	Total amount				

1. All charges shall include the cost of Labour, material, taxes, GST and other incidentals. Nothing extra shall be paid beyond the BOQ rate.
2. The work should be executed as per CPWD / IS Specification.
3. The work will be done according to the direction of Engineer in charge