REQUEST FOR INFORMATION

FOR SETTING UP OF 30 M TOWER AND TORPEDO TUBE ESCAPE TRAINING FACILITY (30 M TTETF) AT INS SATAVAHANA, VISAKHAPATNAM AS TURNKEY PROJECT UNDER BUY INDIAN (IDDM) CATEGORY FOR INDIAN NAVY

1. The Ministry of Defence, Government of India, intends to procure **30 m (Thirty Meter) Tower and Torpedo Tube Escape Training Facility, to be installed at INS Satavahana, Visakhapatnam.**

2. This Request for Information (RFI) consists of three parts as indicated below: -

(a) **Part I**. The first part of the RFI incorporates operational characteristics and features that should be met by the Equipment. Few important technical parameters of the proposed equipment are also mentioned.

(b) **Part II**. The second part of the RFI states the methodology of seeking response of vendors. Submission of incomplete response to the requirements of the RFI in accordance with the format (**Appendix 'B' and 'C'**) will render the vendor liable for rejection.

(c) **Part III**. Guidelines for Framing Criteria for Vendor Selection/ Pre-Qualification in Buy Indian (IDDM) Cases.

PART-I

3. **Intended Use of Equipment (Operational Requirements)**. The 30 m Tower and Torpedo Tube Escape Training Facility is meant to train Submarine personnel on Escape procedures from a sunken submarine using ISP 60 escape suits.

4. **Important Technical Parameters**. This document solicits information regarding compliance with critical technical specifications of the 30 M Tower and Torpedo Tube Escape Training Facility. A detailed response is essential so as to analyze the proposed solution of the vendor with regards to technical capabilities and features of the 30 M Escape Training Tower. Certain important aspects are as follows:-

(a) **Operation & Technical Parameters**. The broad operational and technical characteristics for the 30 M TTETF are placed at **Appendix 'A'**.

(b) Indicative cost for the 30 M TTETF should take into account all aspects of supply, installation, integration, training, Factory Acceptance Trials (FATs), Onsite System Acceptance Test (OSAT) and Life Cycle Support. The indicative cost should also cater the Annual Maintenance Contract (AMC) as per details in **Appendix 'A'**.

Other aspects (if any), may be mentioned specifically. The Firm has to respond to the questionnaire at Appendix 'C'.

(c) Vendor is to indicate whether he has supplied the same or similar equipment to any other customer. Additionally, the vendor is to indicate whether similar equipment is in use in any other Navy.

(d) Vendor is to indicate that whether any additional manpower will be required to operate and maintain the 30 M TTETF or the existing manpower of the platform will be sufficient. The details with respect to training required for personnel is to be mentioned.

(e) Whether the vendor would be able to comply with all provisions of Defence Acquisition Procedure 2020 (DAP 2020) or not. If not, which Para/Clause of DAP 2020 would not be agreed with reasons is to be indicated.

(f) Vendors may consider RFI as advance information to obtain requisite Government clearances.

(g) **Tentative Delivery Schedule**. The overall timeframe of production, delivery with stage wise break-up of the entire project post signing of contract along with Programme Evaluation and Review Technique (PERT) details is required to be submitted.

(h) **Payment Terms**. Vendor is to indicate acceptability to the terms of payment as per DAP 2020.

(j) **Approximate Cost Estimate**. The vendor is to provide the indicative cost of the 30 M TTETF as well as the total project. The indicative cost of the Annual Maintenance Contract (AMC) is to be indicated separately. All the cost serials are to include applicable taxes and duties and are to be mentioned separately.

(k) Vendor is to indicate its capability to execute the project and provide product support including: -

(i) Technical support being provided for maintenance and support of the system during its service life, including warranty. The service life of the system should be at least thirty (30) years.

(ii) Modalities for Annual Maintenance Contract including spares, post warranty period.

(l) Vendor is to indicate the provisions for upgradability of equipment to avoid system obsolescence.

(m) Vendor is to indicate restrictions related to imports, if any and how long will it take to get clearance.

(n) Earliest date by which Original Equipment Manufacturer (OEM) is willing to give a presentation at Naval Headquarters, New Delhi.

(p) **Confidentiality of Information**. No party shall disclose any information to any 'Third Party' concerning the matters under this RFI generally. In particular, any information identified as 'Proprietary' in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party. This clause shall apply to the sub-contractors, consultants, advisors or the employees engaged by a party with equal force.

(q) The BUYER shall have the right to place separate order on the SELLER on or before Eight year from the date of Contract for the main equipment, spares, facilities or services as per the cost, terms and conditions set out in this Contract up to a maximum of 50% quantity and during the original period of Contract provided there is no downward trend in prices. Price escalation as per Consumer Price Index (CPI) inflation shall be considered for issuance of any new contract during the said Eight years. CPI of the original contract date shall be considered as base year CPI for calculation of price inflation for issuance of any new contract.

5. Vendor is to confirm if the following conditions in accordance with DAP 2020, are acceptable:-

(a) The solicitation of offers will be as per 'Single Stage-Two Bid System'. It would imply that a 'Request for Proposal' would be issued soliciting the technical and commercial offers together, but in two separate sealed envelopes. The validity of commercial offers would be at least 18 months from the last date of submission of offers.

(b) The technical offers would be evaluated by a Technical Evaluation Committee (TEC) to check its compliance with RFP.

(c) Amongst the vendors cleared by TEC, a Contract Negotiation Committee (CNC) would decide the lowest cost bidder (L1) and conclude the appropriate contract.

(d) Vendor would be bound to provide product support for time period specified in the RFP, which includes spares and maintenance tools/jigs/fixtures for field and component level repairs.

(e) The vendor would be required to accept the general conditions of contract given in the Standard Contract Document at Chapter VI of DAP 2020.

(f) **Integrity Pact**. An Integrity Pact along with appropriate Bank Guarantee is mandatory requirement and should be provided i.a.w DAP 2020 (**Refer Annexure I to Appendix O of Schedule I**).

(g) **Performance-cum-Warranty Bond**. Performance-cum-Warranty Bond

both equal to 5% value of the contract inclusive of taxes and duties is required to be submitted after signing of contract.

(h) **ToT (if applicable)**. GOI is desirous of license production of equipment after acquiring Transfer of Technology (ToT) for design and production in the case.

6. **Contact Point for Interaction**. The details of the contact point at IHQ MoD(N) is as mentioned below: -

Designation	–	COMMANDER SUBMARINE ACQUISITION
Contact	–	011 – 2301 0096

PART- II

7. **Procedure for Response**

(a) Vendor must fill the form of response as given in **Annexure II to Appendix 'A' to Chapter II** of DAP 20 (details placed at **Appendix 'B'**). Apart from filling details about company, details about the product meeting our technical specifications should also be carefully filled. Additional literature on the product can also be attached with the form. Vendors are to provide para wise compliance in a tabular format to this RFI along with reasons for non-compliance, if any, to all aspects of this RFI.

(b) Vendors must forward an undertaking that in the past they have never been banned / debarred from doing business dealing with Ministry of Defence (MoD) / GoI / or any other GoI organisation.

(c) The filled form should be dispatched at under mentioned address:-

Commodore Submarine Acquisition
Directorate of Submarine Acquisition
IHQ MoD (Navy)
Room No. 120, 'C' Wing Sena Bhawan
New Delhi – 110 010
Tel: +91-11-2301 0162
Fax No.: +91-11- 23010830
e-mail: dsmaq@navy.gov.in

(d) The last date of acceptance of filled form is **02 May 25**. The vendors shortlisted for issue of RFP would be intimated.

8. The Government of India invites responses to this request only from Original Equipment Manufacturers (OEM) / Authorised Vendors / Government Sponsored Export Agencies / Vendors with experience of production of Training Simulator of equivalent complexity (applicable in the case of countries where domestic laws do not permit direct

export by OEMs). The end user of the equipment is the Indian Navy.

9. This information is being issued with no financial commitment and the Ministry of Defence reserve the right to change or vary any part thereof at any stage. The Government of India also reserves the right to withdraw it, should it be so necessary at any stage. The acquisition process would be carried out under the provisions of DAP 20.

PART- III

GUIDELINES FOR FRAMING CRITERIA FOR VENDOR SELECTION/ PREQUALIFICATION IN 'BUY (INDIAN-IDDM)' CASES

10. The guidelines prescribed for short-listing/ pre-qualification of Indian vendors in Buy (Indian-IDDM), Buy (Indian) & Buy & Make (Indian) cases are enumerated in the succeeding paragraphs. **Paragraph 2** deals with the parameters that may be considered for short-listing of vendors, whereas **Paragraph 3** amplifies the process for applying selected parameters to the process of Vendor Short listing.

11. **Parameters.**

(a) **General Parameters.**

(i) Applicant Entity should be an Indian Vendor as defined at Paragraph 20 of Chapter I of DAP 2020.

(ii) Business dealing with applicant Entity or any of its allied entities should not have been suspended or banned, by MoD/ SHQ or any Government Department or organization (as defined in Guidelines for Penalties in Business Dealings with Entities issued vide Ministry of Defence, D(Vigilance) MoD ID No 31013/I/2006-D(Vig) Vol II dated 21 Nov 2016). None of the Promoters and Directors of applicant entity should be a wilful defaulter.

(iii) "Entities" will include companies, with whom the Ministry of Defence has entered into, or intends to enter into, or could enter into contracts or agreements.

(iv) "Applicant entity" may be a company, subsidiary, an associate company (as defined in the Companies Act, 2013), a consortium or a Joint Venture (JV).

(b) **Technical Parameters.**

(i) Vendor shall be a manufacturing entity or a system integrator of defence equipment and not a trading company, except in cases where the OEM participates only through its authorised Vendors.

(ii) Minimum two year experience in broad areas like manufacturing/ electronics etc as applicable in the instant procurement case. If not, then cumulative experience of at least three years in above areas, resulting in gaining of competence for manufacturing the proposed product. (In case the IHQ feels that for a particular equipment a lesser experience could be accepted, then the same should be got approved by the competent authority before including the same in the RFP).

(iii) Where product involves integration, previous experience of not less than one year/ one project in integration of systems/ equipment shall be required.

(iv) **Turnkey Projects**. Experience of successful completion of one Turnkey project of similar nature within last five years with value of at least 20% of AoN cost or currently executing a contract involving system development, installation, trials, commissioning and life support onboard a sea going marine vessel / platform with value of at least 30% of the AoN cost. In case of no experience in Turnkey projects, the vendor for main component of the Turnkey project may be selected if it has experience as per paragraph 2 (b) (ii) above and experience of installation or integration of similar equipment/system or system of systems.

(c) **Financial Parameters**.

(i) **Average Annual Turnover**. Minimum average annual turnover for last three financial years, ending 31st March of the previous financial year, should not be less than 30% of estimated cost of the Buy (Indian-IDDM) should not be less than 30% of estimated cost of the Make portion.

(ii) **Net Worth**. Net worth of entities, ending 31st March of the previous financial year, should not be less than 5% of the estimated cost of the Buy (Indian-IDDM) and Buy (Indian) project and for Buy & Make (Indian) should not be less than 5% of estimated cost of the Make portion. Net worth of entities should not be negative.

(iii) **Insolvency**. The entity should not be under insolvency resolution as per Indian Bankruptcy Code at any stage of procurement process from the issuing of RFP to the signing of contract

(iv) **Credit Rating (Desirable Financial Parameter)**. Long term credit rating equivalent to CRISIL rating on Corporate Credit Scale as CCR-BBB or better, and SME-04 or better for SMEs issued by credit rating agencies recognized by SEBI. Credit rating should be as on 31st March of the previous financial year.

(Note 1: All the above Financial Parameters, except Paragraph 2(c)(iii) above (Insolvency) will not be applicable for Capital Acquisition cases where estimated cost is ₹150 crores and below. However, Net worth of entities should not be negative. For recognized Startups / registered MSMEs, refer Para 4 and 5 of this Annexure.

Note 2: The turnover and net worth of the vendor shall be rounded off to the nearest lower ten/ hundred crores so as to keep the estimated cost of procurement confidential)

(d) **Other Parameters**.

(i) **Industrial License (IL)**. Vendors should be either holding a valid defence industrial license or should have applied for the same before responding to RFP. In any case the vendor must confirm holding of IL before commencement of FET. (Items requiring IL will be as per DIPP Press Note 3 of 2014 as amended from time to time).

(ii) **Registration**. Registered for a minimum of two years (one year for SMEs). Minimum number of years not applicable for JVs constituted specifically for a project.

(iii) **Maintenance, Repair & Overhaul**. Vendors should be capable of carrying out comprehensive Maintenance, Repair & Overhaul, calibration and obsolescence management of the equipment / platform / system indigenously, along with associated jigs, fixtures and test setups, during the designed service life of the equipment.

(iv) **Input / Output Protocols**. Vendors should be able to provide indigenously, the Input / Output Protocols of devices / Line Repair Units envisaged to be replaced by indigenous equivalents or interfaced with equipment of own choice.

12. **Stipulations for Applying Parameters**.

(e) Areas like manufacturing/ electronics/ explosives etc. referred to at Paragraph 2(b)(ii) should be defined in each case of procurement.

(f) In case the Applicant Entity is unable to meet the Financial Parameters by itself, it may rely on its Holding Company (as defined in the Companies Act, 2013 and amendments thereof) ('Companies Act') for fulfilment of the Financial Parameters, in which case reliance must be placed on the Holding Company towards fulfilment of ALL the Financial Parameters.

(g) In case the Applicant Entity is unable to meet one or more of the Technical Parameters by itself, it may rely on a Group Company(ies) for fulfilment of the Technical Parameters. A Group Company in relation to the Applicant Entity may be:-

(i) A company of which the Applicant Entity it is an Associate Company. Such company should have ownership, directly or indirectly, of at least 26% of the voting shares of the Applicant Entity.

(ii) A company which is an Associate Company of the Applicant Entity.

The Applicant Entity should have ownership directly or indirectly, of at least 26% of the voting shares of such Associate Company.

(iii) A Company with whom the Applicant Entity is commonly owned, directly or indirectly, for at least 26% of the voting shares by another company. For example: An Applicant Company A is an Associate Company of Company B, in which B holds at least 26%. Further, C is also an Associate Company of B, in which B holds at least 26%. In this case the Applicant Company may use the credentials of C as well.

(iv) The Holding Company and Subsidiary Companies (as defined under the Companies Act) of the Applicant Entity.

(h) The Applicant entity may be a single entity or a group of entities (the "Consortium"), coming together to implement the project. In such case:-

(i) The credentials of only those members or their related entities may be counted, who have at least 26% equity stake in the Consortium.

(ii) Each Consortium should have a designated Lead Member.

(iii) For Technical Parameters, any of the Consortium members or their Group Companies may meet the criteria.

(iv) For Financial Parameters; the Turnover and Net Worth of the Consortium Member shall be reckoned proportionate to Consortium Member's equity stake in the Consortium, and each Consortium member should meet the other criteria pertaining to Insolvency and Credit Rating. In case the Consortium Member relies on its Holding Company for any one of the above-mentioned Financial Parameters, then reliance must be placed on the Holding Company for meeting all the financial Parameters.

(i) Vendors should provide all necessary self-authenticated documentation in support of their achievement of criteria. Such documentation should inter-alia include:-

(i) Details of projects/ supply orders successfully executed in the last two years.

(ii) Annual reports for three years of applicant entity, parent and associate companies, consortium and JV partners.

(iii) Details of shareholders, promoters, associated, allied and JV companies.

(iv) Details of vigilance action, viz. ongoing investigation and suspension/ debarment/ blacklisting actions against the applicant entity or any of its allied entities, parent company or consortium and JV partners, if

any by any Department/agency of Central Government.

(v) A certificate from CA/CS indicating the financial parameters for the last three years as per Paragraph 2(c).

(**Note**: If a vendor is already a supplier to MoD and/ or has already provided the above documents in such cases, it should be necessary for the vendor to resubmit only such documentations as is necessary to update the above).

(j) Any vendor furnishing false information will be liable for action as per existing guidelines.

(k) Based on these generic parameters, more specific criteria should be evolved by the SHQ with regard to Technical and Financial parameters {Paras 2(b) and 2(c) above} in each procurement case depending upon requirements peculiar to each case keeping in view the overall need to ensure wider vendor participation. The specific criteria evolved by the SHQ for each case, as per these guidelines, may be got approved by the competent authority before including the same in the RFPs.

13. **Start Ups/ MSMEs**. Start ups would be defined as per G.S.R. 127 (E) dated 19 Feb 2019 (as amended from time to time). For procurement cases where the estimated cost is upto ₹300 Crores, to encourage the Start Ups/ MSMEs and build Industrial ecosystem, the recognized Start Ups/ MSMEs in the relevant fields may be considered for issue of RFP without any stipulation of Financial parameters, except Paragraph 2(c)(iii) above (Insolvency) and with General and Technical parameters to be decided on case to case basis. The same waiver will also be applicable for case where estimated cost is between ₹300 to ₹500 Crores, however on a case to case basis where adequate justification exists, subject to approval by the DPB. Guidelines that SHQ will consider to propose relaxation for such an approval are given at Para 5 below.

(**Note**: Start Ups should not be confused with New entrants who may be high/ mid-sized groups having financial support and manufacturing experiences and now venturing into Defence Production).

14. **Guidelines to Seek relaxation of Financial Parameters for Cases Where Estimated Cost is Between ₹300 to ₹500 Crore**. Based on RFI inputs, if it appears that participating Startups/ MSMEs have substantive technical capabilities though they may lack financial credentials, SHQ may propose relaxation in financial criteria for vendor selection based on assessment whether Startups/ MSME(s) should be granted waiver for financial qualification criteria (excluding insolvency) in the project. The SHQ may ascertain that the MSMEs/ Startups have adequate infrastructure, technical manpower and capability to undertake the instant procurement case, meet delivery timelines and provide quality control throughout the supply and product support period. After carefully considering certain conditions given below, the SHQ will proceed to seek approval of DPB for the waiver through the Statement of Case for accord of AoN. The aforesaid conditions are given as under: - (a) Technology/ Product/ Equipment/ Platform has been designed and developed by Startups/ MSME and is for primary use in Defence Sector or is of high interest/ benefit to the Defence Sector. (b) Startup/ MSME has successfully developed prototype through

Make/ iDEX/ TDF route or has been selected as DcPP/ PA by DRDO for the same/ similar product.

15. The criteria for vendor selection shall be clearly stipulated in RFPs so as to maintain transparency. Care shall be taken to ensure that the stipulated criteria are not open to subjectivity and arbitrary interpretation.

Appendix 'A'
{Refers to Para 4(a)}

REQUEST FOR RESPONDING (RFR) – SETTING UP OF 30 M ESCAPE TRAINING TOWER (TURNKEY PROJECT)

PART I

OPERATIONAL AND TECHNICAL CHARACTERISTICS

Introduction

1. The Project is for installation, commissioning, trials and maintenance of 30 m escape training tower at INS Satavahana, Visakhapatnam. INS Satavahana is a premium training establishment which imparts training for all classes of submarines that are being operated by Indian Navy. ETS (Escape Training School) at INS Satavahana trains the personnel in submarine escape drills. The school has a 30 m escape tower that was built in 1976. The existing tower is required to be demolished and replaced with a new tower. The new tower is to be erected at identified alternate location and integrated with existing diving basin, filtration plant, air-bank and power back-up supply with repairs and replacements.

System Information

2. **Basic Function of a 30 m Escape Training Tower**. The 30 m escape training tower will be used to train personnel on escape procedures from a sunken submarine using IDA 59M escape suits. This suit is a combination of breathing set and a rubberized suit. The trainees enter tower at the bottom using airlock method through an RCC or a through torpedo tubes wearing escape suits. The escape is simulated as trainee ascends from the bottom of the tower to the surface of water. The project will entail following: -

(a) **30 m Steel Tower**. The envisaged sketch of 30m steel tower is placed at Appendix-P. The scope of work for renewal of 30m Steel Tower is: -

(i) Fabrication of a 30m steel tower of diameter 3.5m of appropriate grade and thickness (estimated 10 to 14 mm), supported with lattice grid structure and service life Not Less Than 30 years.

(ii) Integration of 30 m steel tower with under-tower escape facility, torpedo tube escape facility and associated systems. Under-tower facility is to be of dia-3.5m and length-2.7m with one escape hatch and

four BIBS. It is to accommodate 10 trainees and three instructors. Specifications/ equipment required are placed at **Annexure-I**.

(iii) Fabrication of a 30m steel tower of diameter 3.5m of appropriate grade and thickness (estimated 10 to 14 mm), supported with lattice grid structure and service life Not Less Than 30 years.

(iv) The structure shall be on a pile foundation. The piles shall be cast insitu and driven to the required depth based on design requirements. The piles shall be capped with pile caps. Seismic zone to be considered is Zone 3.

(v) The building shall be designed with metallic lattice superstructure on piles with provision of below listed six platforms and will be equivalent to G + 18 floors: -

(aa) Platform 1 at 2.70m, Length:20m, Breadth:12m (The platform needs to be covered akin to the existing Torpedo Room with basic amenities available viz; Air Conditioning, Lighting, Communication and NUD facility to accommodate Torpedo Tube and Pre-Chamber)
(ab) Platform 2, 5m from Platform 1, Length:11m, Breadth:9m
(ac) Platform 3, 11m from Platform 1, Length:11m, Breadth:9m
(ad) Platform 4, 18m from Platform 1, Length:11m, Breadth:9m
(ae) Platform 5, 30m from Platform 1, Length:11m, Breadth:9m
(af) Platform 6 at 37m from Platform 1, Length:11m, Breadth:9m

(vi) The area is expected to be cable free. However, NCN cables, other underground cables if encountered, would be shifted by the firm. The existing trees need to be cut prior commencing piling works.

(vii) It is a metal lattice superstructure tower filled with water and is open to environment. So, the building needs to be equipped with fire protection and fire alarm systems for safety and security for the equipment and personnel, if applicable as per CFEES guidelines.

(viii) Every Platform to have four portholes with at-least two of them to have illumination facility.

(b) **Under-tower Escape Set-up**. The under-tower set-up is to be similar to Submarine Conning tower systems. Following scope of work is envisaged: -

(i) Under Tower facility is to be similar to submarine conning tower with remotely controlled hatch system. Pressure Tested door is required

to be installed in Under Tower Chamber. Specifications/ equipment required to be installed are placed at **Annexure-I.**

(ii) Provision of Integrated twin lock chamber Recompression Chamber system of capacity 6 cuM having international standard mating clamp with provision for Transfer of personnel Under Pressure. Integrated HP air storage bottles and Oxygen bottles are required. Provisions/ equipment required in RCC is placed at **Annexure-II.**

(c) **Set-up at 30m Platform**. Platform 5 (Para 2(a) (iii) (ae) above) to have one twin lock chamber Recompression Chamber system of capacity 6 cuM having international standard mating clamp with provision for Transfer of personnel Under Pressure. Integrated HP air storage bottles and Oxygen bottles are required.

(d) **Torpedo Tube Escape Training Facility**. The Scope of Work wrt Torpedo Tube is as follows: -

(i) A new Torpedo Tube simulator similar to the existing one at ETS needs to be integrated with 30m New Escape Tower at Platform 1. Torpedo Tube is a hollow cylindrical tube with bore diameter of 570mm and tube length 8.2m. It has two doors fitted at both ends namely bow doors and rear door. The schematic depicting the arrangement is placed at **Annexure-III.**

(ii) All initial testing including pressure test to 45 kg/cm^2 is to be completed and all relevant documents be provided prior to handing over.

(iii) Provision of four rectangular/ oval shaped view ports (450mm x 30mm) with external LED lighting. Two makings to be provided on one of the view ports depicting the filling of torpedo tube to 50% and 90%.

(e) **Air System**. The Scope of Work wrt HP Air System is as follows: -

(i) Survey, pressure testing and certification of HP Air bottles (Qty-22, Vol - 400 lts, Working Pressure-200 kg/cm^2)

(ii) Installation of HP air system (pipelines, reducers, valves and Pressure relief valves) from compressor to HP air bank and from HP air bank to reducer station.

(iii) Installation of LP air system (Working Pressure-40kg/cm^2) with 100% redundancy (pipelines, reducers, valves and Pressure relief valves) from reducer bank for pressurization and de-pressurization for Under Tower and torpedo tube.

(f) **Water System**. The system connects diving basin to 30m Tower/ Torpedo Tube and has provision for emergency draining. The existing system has pumping capacity of 50m^3/hr (Tower filling pipe- dia: 100mm, Mat: Ductile Iron, Length 110m/ Tower drain pipe- dia:150mm, Mat- Cast Iron, Length 200m/ Emergency drain pipe- dia: 600mm, Mat-Ductile Iron, Length 200m). The Scope of work for the system is as follows: -

(i) Provision of suitable independent filtration and circulation system for water in the tower.

(ii) 50% pipelines may require renewal after survey. The pipelines are to be suitably extended to the location of new tower.

(iii) Details of Repairs and Replacement that need to be carried out for the existing Diving Basin are as follows: -

(aa) Balance Tank to be upgraded.
(ab) Tiling on floor and walls to be changed.
(ac) Area to be covered with to polycarbonate shed.
(ad) Changing rooms and equipment room to be renovated.
(ae) Boundary wall needs to be refurbished.

(iv) Details of Repairs and Replacement that need to be carried out for the existing Filtration Plant are as follows: -

(aa) All five filtration plant pumps to be replaced with upgraded versions of pumps.
(ab) The building housing the Filtration plant to be refurbished/renovated.
(ac) Additional technical equipment is to be integrated with the existing system viz. one ACF Pump, one Active Carbon Filter, two MGF Pumps, one 1200 Dia Multi Grade Sand Filter, one 1600 Dia Multi Grade Sand Filter, two Chlorine Dosing System, two Alum Dosing System, two Ozonator, one ACF Feed Tank, one Balance Tank, one Back Wash Tank.

(g) **Control System**. The Scope of Work installation and integration of Control System is as follows: -

(i) Provision of PLC based automated Control Panels for Recompression Chamber, Under Tower operations and Torpedo-Tube escape operations.

(ii) Provision of One Master Control Console and one Slave Control Console systems to control operations for training at 30m escape tower at ground floor next to RCC. The information required to be monitored includes Under Tower Chamber Pressure, Under Tower Vent Valve

Open/Close indication, Under Tower Scrubber On/Off, Under Tower LP Supply available pressure, Under Tower Emergency Drain Valve On/Off, Trunk Lower Hatch Open/Close, Trunk Upper Hatch Open/Close, Tub Filling Water Indicator, Water Column Pressure and Differential Pressure of Under Tower & Water Column of Tower

(iii) Provision of One Master Control Console and one Slave Control Console systems to control operations for torpedo-tube escape at Platform-1. The information required to be monitored includes Camera Display of all 4 trainees, 50% Water Filling, 90% Water Filling, Torpedo Tube Pressure Indicator, Bow Door Open/Close, Rear Door Open/Close, Under Tower Emergency Drain Valve On/Off, TT Filling Water Indicator, Pre-Chamber LP Supply available pressure, Mini Tower U/W Camera Display, Mini Tower Undressing Camera Display, Pressure differential of TT & Water Column and Pre Chamber Pressure Indicator

(iv) Control of pumping and draining system required remotely along with the manual.

(v) Provision of Remote Electric Operation mechanism for all valves/ reducers with manual over-rides.

(vi) Provision of remotely operated doors and hatches with manual overrides for torpedo tube.

(vii) STW of the integrated system conforming to the requirements and sequence of training.

(h) **Communication System**. Following communication system are to be integrated in the facility: -

(i) Public Announcement system with provision of two-way communication and selection of specific sections.

(ii) Underwater internal communications systems at two-meter intervals in torpedo tube. One Way Hyperbaric communication system (Pr-5 bar) which can be installed inside Torpedo Tube at the upper portion of trainee's locations (dimension not exceeding L-11cm, B-11cm, Ht - 5cm)

(j) **Electrical System**. The scope of work wrt electrical systems is: -

(i) The integrated facility is to be powered from Grid and also connected with a DG set with capacity 10% in excess of peak load of facility through an appropriate Auto Change Over Switch.

(ii) Underwater lighting is to be provided in 30 m Tower and Torpedo Tube.

(k) **Videography**. A new Audio-Video monitoring and recording system (capable to operate under 5 bar pressure) is to be provided as follows: -

(i) Audio-Video and monitoring system in RCC, Under Tower and five platforms (Platform 1 to 5) and Control Panels.

(ii) Provision of Two each underwater camera inside 30m escape Tower fitted (opposite to each other) at height of 4m, 8m, 11m, 18m and 32m.

(iii) Additionally, provision of Hyperbaric Audio-Video and recording system at Under Tower area.

(iv) Provision at Torpedo Tube to have audio and video monitoring facility.

(l) **Emergency/ Safety Systems**. Following provisions are to be made for emergency/ safety systems: -

(i) Provision of automatic emergency de-flooding system with de-flooding rate less than three minute for a fully filled 30m water column.

(ii) Provision of emergency recovery arrangement at 30m platform.

(iii) Provision of additional 6 CuM Recompression Chamber at 30m platform.

(iv) Provision of emergency de-flooding system for Torpedo Tube such that the filled Torpedo Tube be emptied in less than 30 seconds.

(v) Provision of two fire rated lifts till 30m with capacity - 15 persons, weight-1020 kg and dimensions (LxBxH)-3m x 2m x 2.5m.

(vi) Provision of stair case akin to existing structure with requisite safety features for emergency evacuation from 30 m tower.

(vii) Provision of electric alarm system inside Torpedo Tube.

(viii) Provision of Audio-Visual Fire Warning system and Fixed Fire Fighting System.

(m) **Amenities**. The scope of work wrt generic civil works is as follows. : -

(ii) Construction of two classrooms (size - 7m x 6 m x 3.5 m) with air-conditioners and seating capacity and arrangements for upto 30 trainees.

(iii) Construction of washrooms cum changing rooms as follows. The water connection and the sewage connection will be merged with the existing connections.

(aa) 01 Washroom cum changing rooms for trainees 9m x 6m.
(ab) 01 Washroom cum changing room for staff 6m x 3m.
(ac) 01 Washroom for Officers 4m x 3m.

(n) **Dismantling/ Scrap Disposal**. Following work wrt dismantling and clearing of debris is envisaged: -

(i) Safe dismantling followed by scrap disposal of the existing equipment and concrete structure of 30m Escape Training Tower and the building.

(ii) Safe degutting followed by scrap disposal of system pipes and valves degutted from the facility.

3. **Standards**. The equipment and machines to be commissioned should meet the relevant Bureau of Indian standards (BIS) or its equivalent International standards in industry as amended from time to time. Proven models of equipment which are tried and tested in commercial or industrial domain will only be acceptable. The technical infrastructure should meet the relevant BIS or International standards as amended from time to time. The SELLER shall use standards indicated below or any other equivalent International standards as amended from time to time for manufacture of parts and sub-assemblies as required. However, all metallic parts need to be given anti corrosive treatments and coatings to ensure trouble free operations in highly salt laden atmospheric conditions at Visakhapatnam. The Design of SETT needs to conform to prevalent BIS or equivalent International standards as amended from time to time, ensuring that best of systems is supplied. Following BIS or equivalent International standards as amended from time to time need to be followed for design, processes, construction, fabrication, automation and safeties.

(a) IS (Indian Standards) 800 – 2007 General Construction on Steel.

(b) IS 801- 1975 Code of practice for use of cold formed light gauge steel structural members in general building construction.

(c) IS 10748 – 2004 Hot - rolled steel strip for welded tubes and pipes–specification.

(d) IS 3655 - 1985 Recommended practice for electroplating.

(e) IS 101 – (Part 1-4) 1986-89: Methods of sampling and test for paints, varnishes and related products.

(f) IS 2074 – 1992: Ready mixed paint, air drying, red oxide zinc chrome, priming–specification.

(g) IS 513 - 2008: Cold rolled low carbon steel sheets & strips.

(h) IS 325 - 1996: 3 - Phase induction motor – specifications.

(j) IS 1363 - (Part 1-3) 2002: Hexagon head bolts, screws and nuts.

(k) IS 2062 - (2011): Steel for general structural purposes-specification.

(l) IS 4923: 1997 Hollow steel sections for structural use.

(m) IS 2266 - 2002: Steel wire rope for engineering purpose.

4. **Bill of Material (BoM)**. Recommended Bill of Materials (BoM), including spares, tools and accessories are to be provided along with the response to RFI. The Firm is to mention the details of indigenous military materials that are being used in the system and are already being manufactured in the country.

5. **Documentation**. The installation Manual, Technical description, Operating Instructions, Troubleshooting Manual, Repair Manual and other relevant diagram needs to be submitted by the OEM/ Vendor. All units to have tallies and circuit and schematic diagram plates conforming to *NES 723* standards (equivalent or updated extant documents in vogue).

6. **Scope of Work**. The scope of work for turnkey project along with man days are to be provided along with the response to RFI.

7. **Consequential Alteration**. Alteration to any existing equipment for fitment of the proposed system should be avoided to the extent feasible. However, in case of unavoidable alterations that are to be undertaken, the same has to be mentioned in the response to RFI.

All Inclusive Comprehensive Annual Maintenance Contract (AIAMC)

8. The AIAMC is to be provided by the Seller for a period of eight (08) years on expiry of the Warranty period to carry out maintenance and defect rectification of training facility inclusive of spares. The repair and maintenance philosophy for the training facility post warranty will be provided by the Seller, through the AIAMC. The Seller would be committed to provide Indian Navy the requisite spares and consumables for maintenance of the training facility to ensure its long-term

serviceability. The consumables required during the course of training operations would be supplied by the Indian Navy.

9. The AIAMC package will support the following maintenance tasks: -

(a) Rectification of defects as soon on reporting of the same.
(b) Consultancy on technical issues.
(c) Planned preventive maintenance as per recommendation of the OEM
(d) Onsite maintenance support by Seller's personnel.
(e) Component and sub assembly level repairs/ replacement (as applicable) of the equipment/ sub equipment would be undertaken by the Seller at no extra cost.
(f) In case of malfunction of any major equipment and sub-equipment of the training facility, joint analysis would be undertaken by both Navy and the firm to determine whether the malfunction is attributed to operator error or material failure/ equipment breakdown.
(g) All major equipment, sub equipment and components (including auxiliary equipment like pumps, filters, electronics etc) fitted in the training facility will fall under the purview of the AIAMC.

10. The Seller should design the training facility to achieve an availability factor of 92% such that maximum downtime of 28 working days per calendar year is allowed for maintenance routines and defect rectification. These routines and the defect rectification (as required) would be required to be undertaken by the SELLER as part of the warranty and CAMC. Availability factors shall be calculated on a yearly basis and no carry-over of availability factor is permitted.

11. In case, the defective equipment/ component is required to be taken to the Sellers site of repairs, the Seller will make arrangements for collection, transportation and return of the same to the Buyer. The Seller will be required to give a replacement during this period.

Inspection

12. All structures of the training unit are to be designed as per standard plates and sections available in India and FEM analysed for IRS approval. Systems and equipment in the training facility that do not fall under the IRS scope are to be approved by Indian Naval Agencies. The Navy will approve all drawings pertaining to the training facility including system drawings. The OEM will certify all commercial items.

Appendix 'B'
{Refers Para 7(a)}

VENDOR INFORMATION PROFORMA

1. **Name of the Vendor/Company/Firm.**

_____

(Company profile including Share Holding pattern, in brief, to be attached)

2. **Type (Tick the relevant category).**

Original Equipment Manufacturer (OEM) — Yes/No
Authorised Vendor of foreign Firm — Yes/No (attach details, if Yes) others (give specific details)

_____
_____

3. **Contract Details.**
Postal Address:

_____
_____

City:_____ State:_____

Pin Code:_____ Tele:_____

Fax:_____ URL/Web Site:_____

4. **Local Branch/Liaison office/Agent (if any).**

Name & Address: _____

Pin code: _____ Tel: _____ Fax:_____

Email:_____

5. **Financial Details.** Category of Industry (Large/ Medium/ Small Scale):

_____

6. **Certification by Quality Assurance Organisation.**

Name of Agency	Certification	Applicable from (Date & Year)	Valid till (Date & Year)

7. **Details of Registration.**

Agency	Registration No.	Validity (Date)	Equipment
GeM			
DGQA/DGAQA/DGNAI			
OFB			
DRDO			
Any other Government Agency			

8. **Membership of FICCI/ASSOHAM/CII or other Industrial Associations.**

Name of Organisation **Membership Number**

9. **Equipment/Product Profile (to be submitted for each product separately)**

(a) Name of Product:_____

(IDDM Capability be indicated against the product)
(Should be given category wise for e.g. all products under night vision devices to be mentioned together)

(b) Description (attach technical literature):_____

(c) Whether OEM or Integrator:_____

(d) Name and address of Foreign collaborator (if any):_____

(e) Industrial Licence Number:_____

(f) Indigenous component of the product (in percentage):

(i) Overall IC (in percentage): 50% of the Base price.
(ii) IC for material/ components/ software manufactured in India (in percentage): 50% of the Base price.

(g) Status (in service/design & development stage):

(h) Production capacity per annum:

(j) Countries/ agencies where equipment supplied earlier (give details of quantity supplied):_____

_____

(k) Estimated price of the equipment_____

(l) Indigenously produce subsystems, Line Repair Units, software and critical spares of the product: _____

(m) Devices / Line Repair Units for which Input / Output Protocols are indigenously available for enabling replacement by indigenous equivalents or interfacing with equipment of own choice: _____

(n) Capability for carrying out Comprehensive Maintenance, Repair and Overhaul, calibration and obsolescence management of the equipment / platform / system along with associated jigs, fixtures and test setups, during the designed service life of the equipment within India: _____

10. Alternatives for meeting the objectives of the equipment set forth in the RFI.

11. Any other relevant information:_____

12. **Declaration**. It is certified that the above information is true and any changes will be intimated at the earliest.

Note: *Paragraph 44 and Appendix F to Chapter II may be referred.*

(Authorised Signatory)

Appendix 'C'

QUESTIONNAIRE TO BE ANSWERED

1. In case your company is interested in setting-up 30 M TTETF as turnkey project, the details of the same may be forwarded to this office in the format given below: -

Ser	Particulars	Bidder Reply
(i)	Name of Equipment and model (details of multiple equipment/ model may be given separately)	
(ii)	Capability to execute the project and provide product support including: - (i) **Warranty**. Technical support being provided for maintenance and support of the 30 M TTETF during its service life including warranty for two years. The *IN* service life of 30 M TTETF should be at least thirty (30) years. (ii) **AMC**. Modalities for Annual Maintenance Contract with spares post warranty period.	
(iii)	Indian Organisation / Firm to which such system may have been supplied / planned to supply.	
(iv)	Foreign Nations / Organisation to which such system may have been supplied / planned to supply.	
(v)	Whether company has manufacturing / servicing setup in India. If Yes, the details of all the installations pertaining to the firm to be placed. If not, what are the future plans to set up a manufacturing / servicing setup in India?	
(vi)	Annual turnover during the preceding three (03) years.	
(vii)	Import content (if applicable).	
(viii)	Restrictions related to import of any item related to the 30 M TTETF system? If yes, how long will it take to get clearance?	
(j)	Earliest date at which OEM/ Firm is willing to give a presentation to Naval Headquarters, New Delhi.	
(k)	Requirement of any special study to be undertaken by the firm at site. If yes, please indicate detailed requirements.	
(l)	Training Capacity of 30 M TTETF (number of trainees per day/ per week).	
(m)	Downtime of 30 M TTETF for repair or maintenance.	
(n)	**Layout Plan** of the 30 M TTETF along with facilities.	
(p)	**Setting up Time**. The duration for Degutting, Installation, Setting to Work (STW), Trials and Commissioning are to be mentioned separately.	

Ser	Particulars	Bidder Reply
(q)	Breakdown of the Budgetary cost estimate as follows (mandatory): - (i) Indicative cost of safely degutting and disposing the existing tower and structure. (ii) Indicative cost of manufacturing and installing 30 m Tower. (iii) Indicative cost of procurement/ production/ renewal of utilities and support systems. (iv) Indicative cost of setting-up construction of building for installing escape tower and associated specialized spaces. (v) Indicative cost for trials and Setting to Work. (vi) Cost of Annual Maintenance Contract (mandatory). The proposal is envisaged on 'Turnkey basis'. Every item of facility would be under 100% warranty for a period of two years. Thereafter, the vendor needs to provide product support for all equipment, software and hardware supplied under the contract on basis of cost of life cycle support of the equipment. Towards this, following be provided: - (aa) Cost of Manufacturer's Recommended List of Spares. (ab) Itemised Spare Parts Price List. (ac) Optional equipment. (ad) Likely consumption rate of spares based on the exploitation pattern of the equipment. (ae) Total life time support costs. The vendor would have to finalize the terms for the life time product support in current contract only. Other aspects may be mentioned separately. (vii) Cost reduced for disposal of scrap generated out of degutting/ dismantling of existing structure.	
(r)	Total Budgetary Cost	
(s)	No of pages enclosed in the reply.	

Annexure I

UNDER TOWER FITTED EQUIPMENT

Ser	Equipment	Qty
1.	Camera	02
2.	Scrubber	01
3.	Caisson Gauge	01
4.	Pressurisation Valve	01
5.	Exhaust Valve	01
6.	HP Pipe Line SS Diameter	15 mm
7.	HP Airline Pressure Gauge	01
8.	RCC Pressure Gauge	01
9.	Compartment Pressure Gauge	01
10.	Vent Valve	01 (15m)
11.	Drain Valve for Trunk	01
12.	Hand Reducer/ Regulator	01 (30 / 10 Bar)
13.	Tower Diameter	3.57 m
14.	View Port Outer Diameter	40cm (04 in no.)
15.	View Port Glass Diameter	21cm (04 in no.)
16.	Tub Width	1.60 cm
17.	Tub Length	2 m
18.	Trunk Height	1.64 cm
19.	Trunk Height From Base to Tub	1.04 cm
20.	Trunk Diameter	67 cm
21.	Tub Filling Valve	01
22.	Trunk Filling Valve	01
23.	Trunk Filling Pipeline	50 mm
24.	MES Filling Line	20 mm
25.	Trunk Filling Line Differential Gauge	01
26.	Trunk Drain Valve	01
27.	Tub Drain Valve	50 mm
28.	Trunk Ladder in Two Part	2.73 m
29.	Trunk Port Hole	66 cm
30.	Hatch Open/ Shut Lever	01
31.	Step Outside Tub	03 (L - 48 cm)
32.	Step Inside Tub	03 (L - 36 cm)
33.	Under Tower to RCC Hatch Diameter	65 cm
34.	Under Tower Door Height, Width	1.65 m, 88 cm
35.	Octopus with BIBS	04
36.	Retractable Hamilton Valve with SCV	01
37.	Hyperbaric Speaker	01
38.	Tower Water Column Pressure Gauge	01
39.	Under Tower Pressure Gauge	01

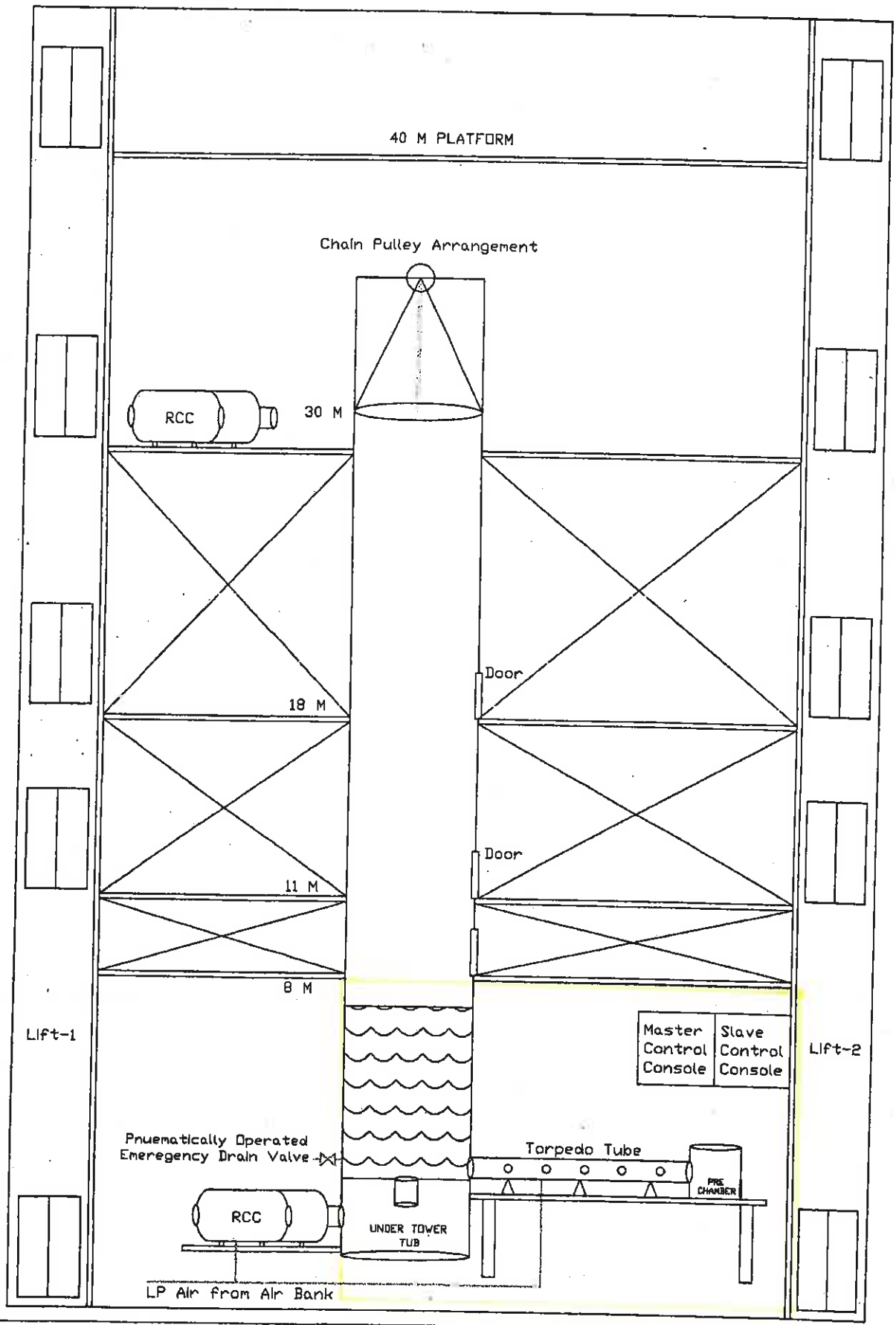
Annexure II

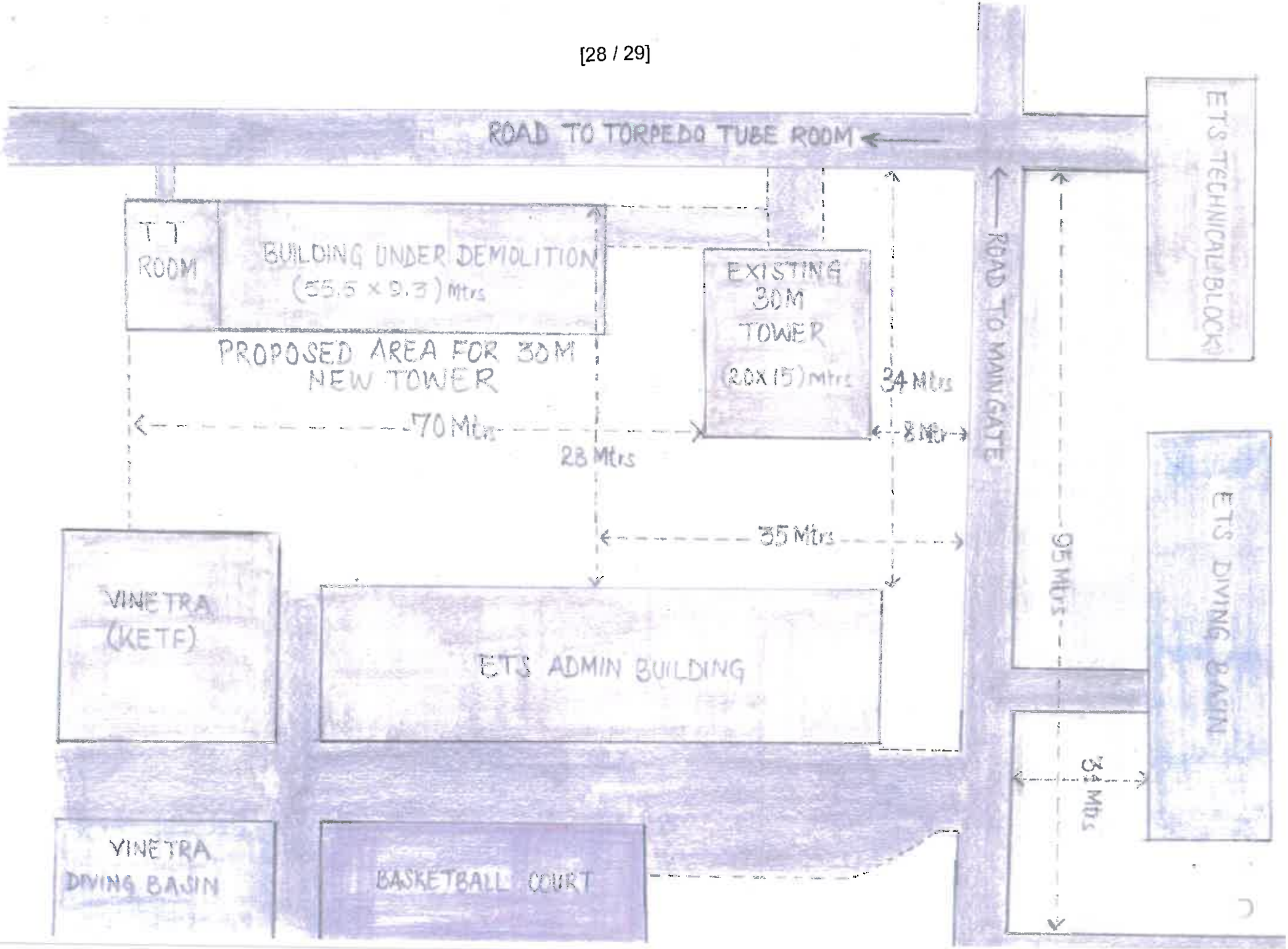
6 CuM CHAMBER EQUIPMENT LIST

S.No	Description	QTY
1.	Chamber Shell	01
2.	Regulators	03
3.	Ball Valves	As Required
4.	Needle Valves	As Required
5.	Fittings	As Required
6.	Ball Valves for Control Panel	As Required
7.	Needle Valves for Control Panel	As Required
8.	Fittings for Control Panel	As Required
9.	Pressure Gauges	As Required
10.	Chamber Communicator	01
11.	Oxygen Analyser	01
12.	CO_2 Analyser	01
13.	Depth Gauges	02
14.	Caisson Gauge	01
15.	SPT	03
16.	HP Air Bottles	24
17.	HP Oxygen Bottles	09
18.	CO2 Scrubber	02
19.	Hyperbaric Fire Extinguisher	02
20.	CCTV Camera	02
21.	View Ports	03
22.	BIBS	09
23.	Chamber Light	03
24.	Tubing (Tungum & SS 316)	As Required
25.	Fire Retardant Fabric	As Required
26.	Humidity & Temperature Indicator	02
27.	Silencer	As Required
28.	Flow Meters	As Required
29.	Pressure Transmitter	01
30.	International Mating Clamp	01
31.	Relief Valve	02
32.	Fire Fighting System	01
33.	Battery Supply	01
34.	Supervisor Console	01
35.	Hyperbaric Telephone	01

Annexure III

COMPLEX SYSTEM OF HIGH PRESSURE AIR & WATER COLUMN OF 30 MTRS IN A CONTROLLED ENVIRONMENT




ROAD TO TORPEDO TUBE ROOM
ETS TECHNICAL BLOCK
TT ROOM
BUILDING UNDER DEMOLITION (55.5 x 9.3) Mtrs
EXISTING 30M TOWER (20X15) Mtrs
ROAD TO MAINGATE
PROPOSED AREA FOR 30M NEW TOWER
70 Mtrs
28 Mtrs
34 Mtrs
8 Mtr
35 Mtrs
95 Mtrs
ETS DIVING BASIN
VINETRA (KETF)
ETS ADMIN BUILDING
34 Mtrs
VINETRA DIVING BASIN
BASKETBALL COURT


Proposed area for new 30M Tower
Existing 30M Tower
30M Tower
Technical Block
VINETRA
ETS Admin Building
Diving Basin
VINETRA DIVING BASIN
Basketball Court
Existing Diving Basin