



ANUSHAKTI VIDHYUT NIGAM Ltd. (ASHVINI)
(A Joint Venture of NPCIL and NTPC Limited)
NOTICE INVITING TENDER (NIT)

email: cmashvini@ntpc.co.in

General Manager, C&MM, on behalf of Anushakti Vidhyut Nigam Limited (ASHVINI) invites online Bids in Two Part from **Indian Bidders** on Central Public Procurement Portal Tendering web site <https://etenders.gov.in/e procure/app> for following items as per the details given below:

1.1	Tender Description	:	Two-Part Tender for Engineering, Design, Supply, Inspection, Testing, Packing, Forwarding, Transportation to Site, Guarantee, Storage, Fabrication, Civil works, Erection, Examination, Testing, Commissioning, Operation and Maintenance as per the tender specification of Nuclear Island Mega EPC Package (NIMEP) for Mahi Banswara Rajasthan Atomic Power Project, Units-1 to 4, (MBRAPP-1 to 4)
1.2	Tender Number	:	MBRAPP/CMM/2026/NIMEP/01
1.3	Tender Fee in Indian Rupees (Non-refundable)	:	Nil
1.4	Tender Publishing Date/Time	:	15.07.2026 at 16:00 Hrs.
1.5	Document Download/Sale Start Date	:	16.07.2026 at 15:00 Hrs.
1.6	Seek clarification start date & time:	:	16.07.2026 at 17:00 Hrs.
1.7	Seek clarification end date & time:	:	26.08.2026 up to 18:00 Hrs.
1.8	Prebid (Offline)	:	24.08.2026 at 11:00 Hrs.
1.9	Last date of submission NDA	:	16.09.2026 up to 15:00 Hrs.
1.10	NDA approval end date	:	21.09.2026 up to 15:00 Hrs.
1.11	Bid Submission start date	:	15.09.2026 at 11:00 Hrs.
1.12	Last date of Sale of Tender	:	30.09.2026 up to 15:00 Hrs.
1.13	Bid Submission end date	:	30.09.2026 up to 15:00 Hrs.
1.14	Online Opening of Technical Bid	:	06.10.2026 up to 11:00 Hrs.
1.15	Online Opening of Financial Bid	:	To be notified later to Techno-Commercially Qualified Bidders

a. **Non-Disclosure Agreement (NDA):**

Format of Non- Disclosure Agreement (NDA) can be downloaded by the Prospective Bidders through the link provided in the NIT of this Tender published at website: <https://etenders.gov.in/eprocure/app>.

Bidder to note the following:

- i. The Tender document available/uploaded on the CPPP portal does not contain the Technical Details/Specifications/ Drawings. These technical details shall be shared only to those Bidders who have signed NDA and uploaded the copy of NDA and PoA at CPPP Portal. After acceptance of NDA at the CPPP Portal by the Purchaser, the bidder can obtain the Technical Details/Specifications/ Drawings from following authority by submitting **Original signed NDA and PoA:**

AGM(C&MM)/Sr. Mgr. (C&MM)
Mahi Banswara Rajasthan Atomic Power Project,
ASHVINI,
PO Napla, Tehsil Chhoti Sarwan,
District Banswara,
Rajasthan 327001
- ii. Prospective Bidder who wishes to download the complete tender document is required to execute a Non- Disclosure Agreement (NDA) to get access to tender document. Submission of duly signed Non-Disclosure Agreement (NDA) by authorized signatory holding Power of Attorney sealed on each page strictly as per the format attached with this NIT, without any deviation, is mandatory, failing which Prospective Bidder will not be able to access the Tender Document.
- iii. In addition to the Non-Disclosure Agreement (NDA), prospective bidder has to furnish Power of Attorney (PoA), in favor of the authorized signatory, clearly specifying that the personnel is authorized to sign the NDA and e-sign/physically sign bid documents on behalf of the Company/Firm.
- iv. Prospective Bidder has to upload the signed and stamped Non-Disclosure Agreement (NDA) online along with PoA in favor of authorized signatory only in <https://etenders.gov.in/eprocure/app>.
- v. Only upon submission/uploading of the Non-Disclosure Agreement (NDA) and PoA, the Prospective Bidder shall be given access to view/download the Tender Document available on the CPPP website <https://etenders.gov.in/eprocure/app> and shall be issued Section-C (Technical Specifications and Drawings) through Memory Stick i.e. Pen-drive. Bidder not signing the NDA or submitting the PoA in favor of authorized signatory shall not be given access to the Tender document.
- vi. After obtaining the technical details/Specifications/Drawings, Bidders are required to check and submit undertaking (format enclosed with NIT) that they have received complete technical details/Specifications/Drawings as per the attached 'Index of Section C'. This undertaking should be submitted within 15 days of receipt of Section-C. The undertaking is to be submitted to the address mentioned at para (a) i. above. In case bidder fails to submit the undertaking within 15 days, it shall be construed that bidder has received the complete technical details/Specifications/Drawings as per the 'Index of Section C' and no further communication in this regard shall be entertained. Format for undertaking is enclosed

herewith.

- b. Prospective Bidder shall also enter into Non-Disclosure Agreement with their sub supplier(s)/ sub-contractor(s)/ agencies (if any) before sharing the Tender/Bidding Document and content thereof with them.

- c. Qualifying Requirements:

The Tenderers wishing to participate in this Tender are required to meet the qualifications as mentioned in Appendix 'X' attached under Section – A of the tender document.

- d. For this tender Integrity Pact (IP) is applicable. The EMD/Bid Security submitted for the tender shall also be considered as IP Security. No separate submission of Integrity Pact Security is required at the time of submission of bid. The EMD/Bid Security shall be forfeited for any violation of IP.

Timely submission of the IP and payment of EMD/Bid Security is the responsibility of the Bidder/Contractor and no reasons / excuses in this regard will be entertained by the Purchaser.

The duly signed Integrity Pact shall be uploaded by the bidder online, along with **the transaction details and UTR No. towards payment of EMD/Bid Security**, in Cover-1 (Fee Cover) of Part-I of the Bid, on or before the date and time stipulated in the NIT. The bids of only those bidders shall be opened whose original EMD/Bid Security and IP are received within due date and time.

- e. ASHVINI reserves the right to accept / reject any or all bids in part / full without assigning any reason.

- f. **Date of Commencement of the Work:**

1. **For MBRAPP-1&2:** The date of commencement of the Work shall be the date of Award of Contract or as specified in the Award of Contract.
2. **For MBRAPP-3&4:** The date of commencement of work shall be communicated separately, which shall not be later than four months from the date of Award of Contract.

Note: The Delivery Period shall be reckoned from the date of Award of Contract or the commencement date as specified in the Contract, whichever is later.

- g. **EMD/Bid Security:**

The EMD/Bid Security is to be submitted by bidder through electronic mode of payment and the **details of transaction with UTR No.** is to be uploaded by the bidder at Cover – 1 while submitting their online bids.

To facilitate the Payment of the EMD/Bid Security through digital transfer the details of bank account are as under:

Name of the Bank	Address of the Bank	Account No. and Name	Account Type	IFSC Code
STATE BANK OF INDIA	MOHAN COLONY, BANSWARA, RAJASTHAN-327001	44466210002 – ANUSHAKTI VIDHYUT NIGAM LTD.	CURRENT ACCOUNT	SBIN0006741

- h. Bidders are advised to submit their bids well in time to avoid any last-minute hindrance.
- i. Changes / Corrigendum / Clarifications pertaining to the Tenders would be hosted on this website only and not in the Print Media. As such the bidders are advised to visit the website for updates, if any.
- j. **ASHVINI Email ID for Communication Specific to Tender or any other Query pertaining to this tender:**

cmmashvini@ntpc.co.in / avadheshupadhyay@ntpc.co.in / ramgopal01@ntpc.co.in
- k. If the due date for opening of Tender/Pre-bid Meeting happens to be a holiday in ASHVINI, the same will be carried out on the next working day at the same time.
- l. **INSTRUCTION SHEET** to Tender No. MBRAPP/CMM/2026/NIMEP/01 is **attached herewith.**
- m. **Brief description** of Complete NIME Package is **attached herewith.**
- n. Bids shall be submitted on Central Public Procurement Portal Tendering web site <https://etenders.gov.in/eprocure/app>. Bidders are advised to visit CPP Portal regularly for updates/amendments, if any. Bidders can contact:

For any technical related queries please call at 24 x 7 Help Desk Number 0120-4001 002, 0120-4001 005 and 0120-6277 787

E-Mail Support: For any Issues or Clarifications relating to the published tenders, bidders are requested to contact the respective Tender Inviting Authority

Technical - support-eproc(at)nic(dot)in (support-eproc@nic.in) Policy Related - cppp-doe(at)nic(dot)in. (cppp-doe@nic.in)

Bidders are advised to visit the CPP Portal regularly for updates/amendments, if any.

As per CPP the file size is to be restricted to 40 MB for uploading documents. Hence, wherever it is not essential to submit high-resolution and colour images, bid documents/clarifications/confirmations may be scanned with 100dpi with black & white option to reduce size of scanned document.



ANUSHAKTI VIDHYUT NIGAM Ltd. (ASHVINI)
(A Joint Venture of NPCIL and NTPC Limited)

NOTICE INVITING TENDER (NIT)

email: cmmashvini@ntpc.co.in

Tender No. MBRAPP/CMM/2026/NIMEP/01

INSTRUCTION SHEET

Instruction to Tenderers indicating the tender number, last date and time for receipt and opening of on-line tender through Central Public Procurement Portal Tendering web site <https://etenders.gov.in/eprocure/app> (CPPP web site).

1.0	Last date for submission of Online Bid both (Fee & Technical Bid in Cover – 1&2) and (Financial bid in Cover - 3) at CPPP web site https://etenders.gov.in/eprocure/app All e-Bids shall be submitted through “On-line Bidding Forms” provided at CPPP web site https://etenders.gov.in/eprocure/app only. No bid will be accepted in manual mode.	<u>As per NIT</u>
2.0	Due Date and Time for On-Line Opening of Fee & Technical Bid (Cover-1&2) at CPPP web site https://etenders.gov.in/eprocure/app	<u>As per NIT</u>
3.0	Due date and time for On-line opening of Financial Bid (Cover - 3). The information of Financial Bid Opening shall be informed only to those bidders, whose bids are found acceptable in Technical Bid (Cover-2).	<u>As per NIT</u>

4.0 Opening of e-Tenders:

4.1 EMD/Bid Security:

The EMD/Bid Security is to be submitted by bidder through electronic mode of payment and the **details of transaction with UTR No.** is to be uploaded by the bidder at Cover – 1 while submitting their online bids.

To facilitate the Payment of the EMD/ Bid Security through digital transfer the details of bank account are as under:

Name of the Bank	Address of the Bank	Account No. and Name	Account Type	IFSC Code
STATE BANK OF INDIA	MOHAN COLONY, BANSWARA, RAJASTHAN - 327001	44466210002 – ANUSHAKTI VIDHYUT NIGAM LTD.	CURRENT ACCOUNT	SBIN0006741

4.2 Integrity Pact (IP) & EMD/Bid Security:

The Integrity Pact (IP) & **EMD/Bid Security** (in form of (a) Credit / Debit Card or (b) RTGS / NEFT or (c) Online transfer) are applicable in this Tender. The IP shall be duly signed by the same signatory who is authorized to sign the bid in original, in the IP format enclosed along with the tender (**Annexure-IP**).

The duly signed Integrity Pact shall be uploaded by the bidder online, along with **the transaction details and UTR No. towards payment of EMD/Bid Security**, in Cover-1 (Fee Cover) of Part-I of the Bid, on or before the date and time stipulated in the NIT.

Timely submission of the IP and payment of EMD/Bid Security is the responsibility of the Bidder/Contractor and no reasons / excuses in this regard will be entertained by the Purchaser.

The Tender received without requisite INTEGRITY PACT and EMD/ Bid Security within the stipulated time indicated at NIT shall be summarily rejected.

Fee & Technical Bid in Cover-1&2 respectively will be opened online as per the schedule mentioned in NIT.

Financial bid (Cover-3) of only such Bidders whose Technical bids are found acceptable will be opened online as per the schedule after evaluation of their technical bids.

5.0 The Tenderers shall take note of the following important aspects of the **Two-Part Tendering**.

5.1 **Two Part Tender** shall be defined as under:

Part – I of Tender consists of following two cover:

Cover - 1 (Fee) which includes Integrity Pact and EMD/Bid Security.

Cover - 2 (Technical) which includes PQR, Technical & Commercial Compliance.

Part – II of the Tender consist of following cover:

Cover – 3 (Financial Bid) which includes BOQ (Summary) and Detailed Items Price.

5.2 **Part I & Part- II** together form the complete bid. Therefore, both the parts are required to be submitted on-line within the due date and time indicated in NIT. The system will not allow submitting e-Bids after the due date and time stipulated for their submission. Therefore, the bidders shall ensure submission of their e-Bids well within the due date and time.

- 5.3 The supporting documents, compliance w.r.t. PQR, Technical requirements and Commercial requirements of the Tender without price shall be submitted in Cover-2.
- 5.4 Financial Bid (Cover-3) bid shall contain only the price as per the Forms/Price Schedule provided in the Cover-3 i.e. BOQ (Summary) and Details Items Price.
- 5.5 **The Tenderer shall take special care not to mix up price details submitted against Financial Bid (Cover-3) with any other Cover-1/2 (Fees/Technical) and vice versa. Any violation of this condition may lead to rejection of his tender.**
- 5.6 A pre-bid meeting for providing clarifications to the tenderers will be held offline at the **date and time as indicated in the NIT at NPCIL HQ, Nabhikiya Urja Bhawan, Anushakti Nagar, Mumbai-400094.**
For this purpose, tenderers should send their queries (both technical and commercial) **before the end date stipulated in NIT for seeking Pre-Bid Clarifications**, in specified format i.e., **Appendix-Y** only.

Note: Only Indian Citizens are allowed to attend the Pre-Bid meeting. The details of representatives such as Name, Company Name, Designation of the representative along with copy Aadhar Card for participating in the Pre-Bid meeting must be sent at least two days prior to Pre-bid meeting date to enable us to make proper arrangements.

- 5.7 **A soft & editable (in MS Excel)** copy of the queries should also be sent along with the hardcopy in a suitable media or by e-mail to commashvini@ntpc.co.in / avadheshupadhyay@ntpc.co.in / ramgopal01@ntpc.co.in / in specified format i.e., Appendix-Y only.
- 6.0 All communications other than in e-mode form, if necessitated, in respect of this Tender shall be addressed only to the **AGM (C&MM) MBRAPP, ASHVINI, PO Napla, Tehsil-Choti Sarwan, District: Banswara Rajasthan 327001**, from the date of publishing of tender and till the finalization of the tender and to no other authority in ASHVINI as per the conditions stipulated in the enclosed Invitation to Tender and Tendering Conditions.
- 7.0 In case the due date for On-line opening of the e-tender happens to be a holiday in ASHVINI, tender will be opened on-line on the next working day.

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ANUSHAKTI VIDHYUT NIGAM LTD. (ASHVINI)

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BRIEF TENDER SCOPE

NUCLEAR ISLAND MEGA EPC PACKAGE FOR MAHI BANSWARA RAJASTHAN ATOMIC POWER PROJECT (MBRAPP-UNITS 1&2)

	ANUSHAKTI VIDHYUT NIGAM LTD. (ASHVINI) (Joint Venture NPCIL and NTPC Limited)
	NUCLEAR ISLAND MEGA EPC PACKAGE FOR MBRAPP-1&2

The scope of MBRAPP-1&2 Package is briefly described below:

1. Module M1: Civil Module

The module M1 (Civil Module) of NIMEP is for the construction of different structures/buildings housing various Equipment, Systems & Components of the 700MWe Nuclear Power Plant for MBRAPP-1&2. This Module comprises of the following 4 sub- modules.

- i. Sub-Module 1: Main Plant Civil Package
- ii. Sub-Module 2: NDCT Package
- iii. Sub-Module 3: IDCT Package
- iv. Sub-Module 4: Miscellaneous Civil Works Package (Site Infrastructure Buildings)

1.1 Sub-Module S1(Main Plant Civil Package)

The Main Plant Civil Package under the Single Mega EPC Package tender takes care of construction of all main plant civil structures as listed below.

1. Nuclear Buildings Raft, Containments, Domes for NB-1, NB-2.
2. Reactor Building Internal Structure (RBIS-1, RBIS-2)
3. Reactor Auxiliary Building (RAB-1, RAB-2).
4. Control Building (CB)
5. Station Auxiliary Buildings (SAB-1A, 2A, 1B & 2B) including Day-oil Tank and DG Chimney.
6. Waste Management and Exhaust Ventilation Building, Dyke area.
7. Fuel Handling & Mechanical Workshop.
8. Ventilation Stack, Stack Activity Monitoring Room and Exhaust Collection Box.
9. Heavy Water (D2O) Upgrading Plant Building & Tower (including D2O Dyke & APW Dyke).
10. Fire Water Pump House.
11. Safety Related Electrical Houses (SREH-1 & SREH-2) including Safety Related Electrical Houses Annex buildings (SREH-Annex 1 & SREH-Annex 2).
12. Safety Related Pump House.
13. Fuel Oil Storage Area (FOSA-1 & FOSA-2).
14. New Fuel Storage Building.
15. Heavy Water Drum Storage Facility.
16. NDCT Chemical dosing & Storage shed.
17. Earthing – Installation of grounding and lightning protection conductor etc., for the buildings covered in this package.
18. Storm water & plant water drains.
19. Covered Passages.
20. Internal & External sewerage up to STP.
21. CAS/ Entrance Building & PPS fence.
22. Culverts.
23. Other miscellaneous buildings and works.
24. Finishing works for above buildings /structures.
25. Enabling works.
26. Overhead Water Tank.
27. Pipe & Cable tunnels / trenches.

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	NUCLEAR ISLAND MEGA EPC PACKAGE FOR MBRAPP-1&2

28. Retaining wall.
29. Roads, Hard Stands & Turning Pads.
30. Seismic Switch Rooms

In addition to above buildings the following **common facilities**: shall be constructed:

- 31 Nuclear Training Center cum Simulator Building
- 32 Onsite Emergency Support Center (OESC).
- 33 Solar Evaporation Facility (SEF).
- 34 Additional Waste Storage Dyke Area
- 35 Switchyard Control Building
- 36 Fire, Industrial Safety and Health (FISH) Building.
- 37 Operation Storage Pond.
- 38 Near Surface Disposal Facility.
- 39 Plant Drainage Storage Pond.
- 40 MOF Sampling Building
- 41 Finishing works for above buildings /structures.
- 42 Enabling works.
- 43 Main Plant Boundary Patrolling Roads and other plant roads.
- 44 Any other miscellaneous structures necessitated during execution of contract

1.2 Sub-Module S2 (NDCT Package)

The work proposed under this contract includes:

1. Lump-sum contract works for Design, construction, manufacture, supply, erection, testing and commissioning of 4 Nos of Natural Draught Cooling Towers (NDCT) and Cooling Water Pump House (CWPH) including allied works.
2. Item Rate contract works for Civil and Allied Works

1.3 Sub-Module S3 (IDCT Package)

The work proposed under this contract includes:

Lump sum contract works for Design, construction, manufacture, supply, erection, testing and commissioning of 4 Nos of Induced Draught Cooling Towers (IDCT).

1.4 Sub-Module S4 (Miscellaneous Civil Works Package (Site Infrastructure Buildings))

The works proposed to be performed under this contract are for the Engineering, Procurement & Construction of various miscellaneous structure / building as brought out below:

1. Site Administrative Building
2. O&M Office Building
3. MML & SODAR
4. Canteen Building
5. STP
6. E/S Ball Filling shed

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	NUCLEAR ISLAND MEGA EPC PACKAGE FOR MBRAPP-1&2

7. BARCIS Room
8. IDCT chemical dosing & Storage shed
9. RC Shop
10. RC Shed
11. Main Plant Boundary, watch towers etc.
12. Calandria Shed

2. Module M2: Reactor Module:

This module M2 of NIMEP is basically for the supply of Major Reactor Components, Fuel Handling System Equipment's and their erection & Installation at site. This module also consists of supply of Reactor Building Cranes & Hoists, Crawler crane and 250 MT Mobile cranes. The module is sub-divided into four sub-modules.

2.1 Sub-Module S1:

The Sub-module S1 is for the supply of major Reactor Components which includes End Fittings & Associated Components, Calandria Vault Top Hatch Beams & Deck Plates assembly, Main Air Lock & Auxiliary Air Lock and accessories (the door frames of MAL & AAL requires at the site before the construction of MAL & AAL barrel at 100 M EL.), Reactor Building Doors, Drive Mechanisms and mandatory Spares for Shut Off Rod (SR), Control Rod (CR) and Adjuster Rod (AR) Systems, Stand Pipe Thimble Package, End fittings & Reactivity devices Bellows Package, Main Airlock & Auxiliary Airlock Bellows Package and Lifting Tables for Reactivity Devices

2.2 Sub-Module S2

The sub-module S2 is for supply & erection of Crane Package, Hoist Package, Crawler crane supply & commissioning at site before the supply of End Shield & Calandria equipment, 250 MT mobile crane and Feeder Header Insulation Cabinets (FHIC).

2.3 Sub-Module S3

The sub-module S3 is for site erection & installation of Reactor components mainly, End Shield - Calandria assembly and associated components, Reactivity Devices, Coolant Channel Assembly, Feeder & Header Insulation Cabinet, MAL and AAL, Fuel handling system and other equipment. Contractor shall ensure that required tools & tackles are available well in advance before the erection & installation of equipment.

2.4 Sub-Module S4

The sub-module S4 is for supply of Fuel Handling Systems, which consists of Fueling Machine Head & Associated Equipment's, Fuel Transfer Equipment, Sealing Plug & Shielding Plug Assemblies, Fuel Locator Assemblies, Roll-on-Shield, Sealing & Shielding Door Assemblies, Radiation Shielding Window Assemblies, Fueling Machine Service Cart and Auxiliary Sealing cum Shielding Door Assemblies.

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	NUCLEAR ISLAND MEGA EPC PACKAGE FOR MBRAPP-1&2

3. Module-M3: Nuclear & Mechanical System (N&MS) Module

The detailed scope of each sub-module is provided in Section C of respective sub-module. A brief description of the module is provided below.

3.1 Sub Module S1 (Primary Piping Package):

The scope of Contractor includes Manufacture, Supply, Erection, inspection, examination and testing of complete system piping, Equipment, tubing with fittings, Valves, supports, penetration bellows, panels, power packs etc. and C&I Items installed on the Pipes and equipment mainly for the following systems:

1. Primary Heat Transport System (PHT)
2. Moderator and its auxiliary systems including Reactivity Devices Process systems
3. Fuel Handling Process System, Reactor Auxiliary Systems.
4. Annulus Gas Monitoring System (AGMS) & Containment Filtration & Ventilation System (CFVS).
5. Domestic Water system, Chilled water system, Compressed air system, Service Air System, Mask Air System, Instrument Air System & Fire Water System inside RB & RAB. Active Drainage and APW Systems for complete plants are covered in the scope of the package.
6. Erection of Free Issue Equipment like Steam Generators, Primary Coolant Pumps, Reactor Header Assemblies, Pressurizers and Bleed condensers etc.
7. Supply & Erection of D2O Heat Exchanger package, PDHRS Condensers and Moderator Heat Exchangers.
8. Supply & Erection of ECCS Accumulators & D2O Storage Tanks.
9. Supply & Erection of Primary System Pumps, Blowers and Compressor package.

3.2 Sub Module S2 (Nuclear Ventilation Package):

The scope of Contractor consists of system design, engineering, manufacture, quality assurance, supply, erection, examination, testing, balancing of air Flows, commissioning and handing over of the systems at site for systems listed below:

1. Primary Containment (PC) Ventilation System.
2. Secondary Containment Ventilation, Clean up & Purge Air System.
3. Primary Containment Controlled Discharge System (PCCD).
4. Reactor Building Vapor recovery and Condensate collection system.
5. FM Vault and Pump Room atmosphere and Low Enthalpy area cooling system.
6. Reactor Auxiliary Building (RAB) AC and Ventilation System.
7. AC and Ventilation System of SAB including DG room.
8. WMP, FM and Mechanical Workshop and SLM AC and Ventilation System.
9. Control Building AC and Ventilation including emergency fresh air ventilation system for MCR.
10. Fire Water Pump House (FWPH) Ventilation system.
11. Safety Related Pump House (SRPH) Ventilation system.
12. Safety Related Electrical House SREH Ventilation System
13. Exhaust Ventilation System for Heavy Water Evaporation & Clean-up plant and Upgrading plant building
14. New Fuel Bulk Storage Building Ventilation system
15. TBEB A/C and Ventilation System
16. Simulator facility of NTC Air conditioning (AC) and Ventilation System
17. OESC A/C and Ventilation System
18. Switch Yard Control Building A/C and Ventilation System

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	NUCLEAR ISLAND MEGA EPC PACKAGE FOR MBRAPP-1&2

19. Post-Accident Hydrogen Management System.

3.3 Sub Module S3 (Common Service Package):

The scope of Contractor consists of supply, erection and commissioning of the following systems

1. Light Water Systems.
 - Fire suppression system and portable fire extinguishers.
 - Domestic water system
 - DM water system
 - Fuel Oil storage and transfer system
 - Service water system
 - Non-active drainage system
2. Compressed Air & Dryer System.
3. Chillers & chilled water distribution.
4. Heavy Water Upgrading plant, Clean-Up Plant and Downgraded D2O Storage Facility.
5. Waste Management Plant.

Note: - MOF Sampling System, OESC Equipment, and NSDF Facilities (Gantry Crane, Incineration System, MDU & Steel Chimney) are common for MBRAPP Units 1 to 4; however, their scope shall be considered only under the MBRAPP-1&2 package.

3.4 Sub Module S4 (Plant Water Systems Package):

This sub-module is engineered by Contractor and consists of civil, mechanical, material handling, ventilation, C&I and electrical works for:

1. Complete plant water system including intake arrangement, Intake screen air back wash system, Plant Water Pump House, piping, PTP & other structure, auxiliaries.
2. Filtration and RO based DM Plant, DM water and Domestic water distribution system within terminal point.
3. Chlorine dioxide system includes plant and complete distribution.
4. NDCT Acid Dosing Plant (NDCT ADP).
5. Plant drains storage pond (PDSP) including PDSP pump house & other structures, auxiliaries.
6. Material handling arrangements, Air & Ventilation systems, Portable Fire extinguishers, control & instrumentation, and electrical works for all above structures, pump houses and buildings.

3.5 Sub Module S5 (Chilled Water Plant for Reactor Building High Enthalpy Area Cooling)

This Sub-Module covers the Design & Engineering of Chillers, Pumps etc. and their foundations, Manufacturing, Pre-fabrication, Supply, Transportation, Handling, Storing, Cleaning, Field-welding, Erection / Construction, Inspection, examination & testing, painting, insulation of pipelines, valves, pumps, complete electrical and C&I works as per BOQ and specification, casting of foundations for chillers and pumps, etc., assistance during commissioning, complete commissioning of Chillers, Pumps, trial operation, performance guarantee (PG), handing over of complete system.

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3.6 Sub Module S6 (Additional Waste Management Systems)

The scope of work involves complete turnkey execution of additional Waste Management systems, including Additional Dyke Tanks, Pump Room, and Solar Evaporation Facility (SEF), Mobile Waste Storage Tanker and Pumping System, Cementation System with Motorized Rail Trolley, and Dissolved Air Flotation (DAF) System for liquid waste treatment. The contractor is responsible for design, engineering, procurement, manufacturing, inspection, supply, transportation, storage, erection, and commissioning of all mechanical and C&I systems. This includes preparation and approval of drawings, vendor coordination, quality assurance, and site execution works such as piping, equipment installation, and civil interfacing. The scope also covers pre-commissioning, testing, commissioning support, and submission of all required documentation including as-built drawings and manuals. Additionally, the contractor shall ensure safety compliance, provide training to purchaser personnel, and deliver a fully operational system meeting all specified performance and quality standards equipment.

3.7 Sub Module S7 (Distillation Column)

The Contractor shall be fully responsible for the manufacture, supply, testing, and transportation of distillation column assemblies along with supervision of erection. The scope includes fabrication of PB wire mesh, cleaning, internal packing, activation, and performance testing of column sections. It also covers arrangement of technology transfer from BARC, submission of drawings and QA documents for approval, and compliance with all applicable specifications and quality standards. Delivery of equipment to site and supervision during erection and commissioning are included.

4. Module M4: Electrical Module

4.1 Sub Module S1 (Main Plant Electrical System):

This sub module covers supply, erection, testing & commissioning of various electrical equipment of main plant electrical system on EPC basis. This sub-module being an NPCIL engineered system, system-level engineering at system level has been carried out by NPCIL and BOQ has been provided in the tender. Major equipment/items/systems covered under this sub-module include Auxiliary transformers, Switchgears, PMCCs, MCCs, Busducts, Distribution Boards, Protection Panels, ESCADA, Batteries, Battery Chargers, UPS, Inverters, Electrical Penetration Assemblies of RBs for Electrical and C&I equipment, Cables, Cable Trays & supports, Lighting system, Elevators etc.

4.2 Sub Module S2 (400 KV and 220 KV Switchyard)

This sub module covers design, engineering, supply, erection, testing & commissioning for extension and augmentation in 220kV & 400kV Switchyards, Transformer yards & 400kV Transmission lines within main plant area of MBRAPP along with civil and structural works on EPC Lumpsum basis. As this sub-module is to be executed on EPC Lumpsum basis, engineering at system level must be carried out and BOQ has to be worked out during execution stage by the Contractor. Major equipment/items/systems covered under this sub-module include Circuit Breakers, Isolators, Current Transformers, Surge arrests, EHV Cables, Insulators, gantry towers, equipment support structures, ESCADA panels, Protection & Control panel, Cables, Cable Trays & supports, Lighting system etc.

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	NUCLEAR ISLAND MEGA EPC PACKAGE FOR MBRAPP-1&2

4.3 Sub Module S3 (Power Transformers and Shunt reactors)

This sub module covers design, engineering, manufacturing, testing, supply, erection & commissioning of 400 KV Generator Transformers, Unit Transformers, 220 KV Startup Transformers and 400 KV Shunt Reactors.

4.4 Sub Module S4 (Diesel Generator)

This sub module covers design, engineering, manufacturing, inspection and testing of DG sets at contactors' workplace, packing, supply, transportation, erection and commissioning of 4nos of 4200 KW Emergency DG sets/unit, 200 KVA DG set/unit, associated systems and Firefighting system. This package will be operated as Lump-sum package. Out of 4 no's of EDG set/unit, 2 no's will be process water cooled and 2 no's will be air radiator cooled.

4.5 Sub Module S5 (Electrical System for ON SITE EMERGENCY SUPPORT CENTRE)

This sub-module covers the design, engineering, manufacturing, supply, erection, and commissioning of electrical System/components/equipment for the On-Site Emergency Support Centre (OSEC) building. The scope includes preparation of drawings, QAPs, testing procedures, and detailed engineering to suit actual site requirements.

5. Module M5: C&I Module

This module consists of two Sub Modules:

- 1) M5-S1: Control Centre Instrumentation (CCI) Sub Module.
- 2) M5-S2: Field Instrumentation (FI) Sub Module.

5.1 Sub Module M5-S1: Control Centre Instrumentation (CCI) Sub Module:

M5-S1 sub module consists of design, engineering, supply, storage, assembly, fabrication, erection, integration, inspection, testing and commissioning, verification and validation of Control Center Instrumentation (CCI) systems like, Computer Based System (CBS), CBS Group-I: NPCIL Engineered CBS, CBS Group-II: Contractor/Vendor engineered CBS, Non-Computer Based System (NCBS), Fuel Handling Control System (FHCS), Control Room (MCRP, OCs, SCRP, WAP, LVS Panel, Video Wall, desks), Power Supply Distribution (CPSDP / DCDB), Condition Monitoring System (CMS), Prototype Panels and Systems, Simulator (MCRPs, OCs, FHC MCRPs, SCRPs, IO Panels, Video Walls, WAPs and LAN components including Printers, etc.), Cabinets, Cables, Network Components, Spares (Mandatory / Commissioning), Programming and Development Tools for 2 units of 700MWe Nuclear Power Plants at MBRAPP-1&2 in Banswara, Rajasthan. Detailed scope of CCI Sub Module (M5-S1) is covered in different sections of tender documents.

5.2 Sub Module M5-S2 (Field Instrumentation):

M5-S2 sub module consists of engineering, supply, storage, assembly, fabrication, erection, integration, inspection, testing and commissioning, independent verification and validation of Field Instrumentation Devices/Equipment, Industrial Systems, Programmable Logic Control Systems and Standalone I&C

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systems, and Nuclear Power Plant (NPP)-specific I&C systems for 2 units of 700 MWe Nuclear Power Plants at MBRAPP-1&2 in Banswara, Rajasthan. Detailed scope of FI Sub Module (M5-S2) is covered in different sections of tender documents.

6. Module M6: Lab, Workshop and other O&M Facilities Module:

Module (M6) has scopes related to Laboratory, Workshop and other O&M Facilities and consist of six sections:

- i. **MMU - Mechanical Maintenance Unit Workshop Establishment:**
Mechanical maintenance Workshop Establishment covers supply, erection, commissioning, demonstration of functional testing of mechanical maintenance workshop machines with accessories, equipment, tools & tackles and material handling devices.
- ii. **EMU - Electrical Maintenance Unit Workshop Establishment:**
Electrical Maintenance workshop Establishment section covers supply, demonstration of functional testing of Electrical maintenance workshop equipment, tools & tackles and testing kits.
- iii. **FHU- Fuel Handling Unit Workshop Establishment:**
Fuel handling workshop Establishment section covers Design & manufacturing, supply, demonstration of functional testing of Fuel maintenance workshop equipment, tools & tackles and testing kits.
- iv. **HPU -Health Physics Unit Establishment:**
Health Physics Unit Establishment section covers supply, commissioning, demonstration of functional testing of Health Physics workshop measuring sensors & devices.
- v. **CHEM LAB -Chemical Lab Establishment:**
Chemical Lab Establishment section covers supply, commissioning, and functional testing demonstration of Chemical lab workshop measuring sensors and devices.
- vi. **FUR -Furniture Establishment:**
Furniture Establishment covers supply with logistics, assembly of furniture for various workshops & location of plant.

Package shall be executed as per the requirements spelt out in the respective modules & submodule. In all correspondence of this tender, respective module & sub module shall be referred.

The respective module & its sub module will govern by technical specification / requirements. Interchangeability / cross reference request by contractor (if any) will be at sole discretion of the PURCHASER. The request for the same shall be justified with proper supporting documentation and tender clauses with page number by bidder if he wishes to use clauses from another Module/Sub module.

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BRIEF TENDER SCOPE

NUCLEAR ISLAND MEGA EPC PACKAGE FOR MAHI BANSWARA RAJASTHAN ATOMIC POWER PROJECT (MBRAPP UNITS -3&4)

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The scope of MBRAPP-3&4 Package is briefly described below:

1. Module M1: Civil Module

The module M1 (Civil Module) of NIMEP is for the construction of different structures/buildings housing various Equipment, Systems & Components of the 700MWe Nuclear Power Plant for MBRAPP- 3&4. This Module comprises of the following 4 sub- modules.

- i. Sub-Module 1: Main Plant Civil Package
- ii. Sub-Module 2: NDCT Package
- iii. Sub-Module 3: IDCT Package
- iv. Sub-Module 4: Miscellaneous Civil Works Package (Site Infrastructure Buildings)

1.1 Sub-Module S1(Main Plant Civil Package)

The Main Plant Civil Package under the Single Mega EPC Package tender takes care of construction of all main plant civil structures as listed below.

1. Nuclear Buildings Raft, Containments, Domes for NB 3 & 4
2. Reactor Building Internal Structure (RBIS-3, RBIS-4)
3. Reactor Auxiliary Building (RAB-3, RAB-4)
4. Control Building
5. Station Auxiliary Buildings (3A, 4A, 3B & 4B) including Day-oil Tank and DG Chimney
6. Waste Management and Exhaust Ventilation Building, Dyke area.
7. Fuel Handling & Mechanical Workshop.
8. Ventilation Stack, Stack Activity Monitoring Room and Exhaust Collection Box.
9. Heavy Water (D2O) Upgrading Plant Building & Tower (including D2O Dyke & APW Dyke).
10. Fire Water Pump House.
11. Safety Related Electrical Houses (SREH-3 & SREH-4) including Safety Related Electrical Houses Annex buildings (SREH-Annex 3 & SREH Annex 4).
12. Safety Related Pump House.
13. Fuel Oil Storage Area (FOSA-3 & FOSA-4).
14. New Fuel Storage Building.
15. Heavy Water Drum Storage Facility.
16. NDCT Chemical dosing & Storage shed.
17. Earthing – Installation of grounding and lightning protection conductor etc., for the buildings covered in this package.
18. Storm water & plant water drains.
19. Covered Passages.
20. Internal & External sewerage up to STP.
21. CAS/ Entrance Building & PPS fence.
22. Culverts.
23. Other miscellaneous buildings and works.
24. Finishing works for above buildings /structures.
25. Overhead Water Tank.

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	NUCLEAR ISLAND MEGA EPC PACKAGE FOR MBRAPP-3&4

26. Pipe & Cable tunnels / trenches.
27. Retaining wall.
28. Roads, Hard Stands & Turning Pads.
29. Seismic Switch Rooms
30. Enabling Works

1.2 Sub-Module S2 (NDCT Package)

The work proposed under this contract includes:

1. Lump-sum contract works for Design, construction, manufacture, supply, erection, testing and commissioning of 4 Nos of Natural Draught Cooling Towers (NDCT) and Cooling Water Pump House (CWPH) including allied works.
2. Item Rate contract works for Civil and Allied Works

1.3 Sub-Module S3 (IDCT Package)

The work proposed under this contract includes:

Lump sum contract works for Design, construction, manufacture, supply, erection, testing and commissioning of 4 Nos of Induced Draught Cooling Towers (IDCT).

1.4 Sub-Module S4 (Miscellaneous Civil Works Package (Site Infrastructure Buildings))

The works proposed to be performed under this contract are for the Engineering, Procurement & Construction of various miscellaneous structure / building as brought out below:

1. O&M Office Building
2. Canteen Building
3. E/S Ball Filling shed
4. BARCIS Room
5. IDCT chemical dosing & Storage shed
6. RC Shop
7. RC Shed
8. Calandria Shed

2. Module M2: Reactor Module:

This module M2 of NIMEP is basically for the supply of Major Reactor Components, Fuel Handling System Equipment's and their erection & Installation at site. This module also consists of supply of Reactor Building Cranes & Hoists. The module is sub-divided into four sub-modules.

2.1 Sub-Module S1:

The Sub-module S1 is for the supply of major Reactor Components which includes End Fittings & Associated Components, Calandria Vault Top Hatch Beams & Deck Plates assembly, Main Air Lock & Auxiliary Air Lock and accessories (the door frames of MAL & AAL requires at the site before the construction of MAL & AAL barrel at 100 M EL.), Reactor Building Doors, Drive Mechanisms and

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	NUCLEAR ISLAND MEGA EPC PACKAGE FOR MBRAPP-3&4

mandatory Spares for Shut Off Rod (SR), Control Rod (CR) and Adjuster Rod (AR) Systems, Stand Pipe Thimble Package, End fittings & Reactivity devices Bellows Package, Main Airlock & Auxiliary Airlock Bellows Package and Lifting Tables for Reactivity Devices

2.2 Sub-Module S2

The sub-module S2 is for supply & erection of Crane Package, Hoist Package and Feeder Header Insulation Cabinets (FHIC).

2.3 Sub-Module S3

The sub-module S3 is for site erection & installation of Reactor components mainly, End Shield - Calandria assembly and associated components, Reactivity Devices, Coolant Channel Assembly, Feeder & Header Insulation Cabinet, MAL and AAL, Fuel handling system and other equipment. Contractor shall ensure that required tools & tackles are available well in advance before the erection & installation of equipment.

2.4 Sub-Module S4

The sub-module S4 is for supply of Fuel Handling Systems, which consists of Fueling Machine Head & Associated Equipment's, Fuel Transfer Equipment, Sealing Plug & Shielding Plug Assemblies, Fuel Locator Assemblies, Roll-on-Shield, Sealing & Shielding Door Assemblies, Radiation Shielding Window Assemblies, Fueling Machine Service Cart and Auxiliary Sealing cum Shielding Door Assemblies.

3. Module-M3: Nuclear & Mechanical System (N&MS) Module

The detailed scope of each sub-module is provided in Section C of respective sub-module. A brief description of the module is provided below:

3.1 Sub Module S1 (Primary Piping Package):

The scope of Contractor includes Manufacture, Supply, Erection, inspection, examination and testing of complete system piping, Equipment, tubing with fittings, Valves, supports, penetration bellows, panels, power packs etc. and C&I Items installed on the Pipes and equipment mainly for the following systems:

1. Primary Heat Transport System (PHT)
2. Moderator and its auxiliary systems including Reactivity Devices Process systems
3. Fuel Handling Process System, Reactor Auxiliary Systems.
4. Annulus Gas Monitoring System (AGMS) & Containment Filtration & Ventilation System (CFVS).
5. Domestic Water system, Chilled water system, Compressed air system, Service Air System, Mask Air System, Instrument Air System & Fire Water System inside RB & RAB. Active Drainage and APW Systems for complete plants are covered in the scope of the package.
6. Erection of Free Issue Equipment like Steam Generators, Primary Coolant Pumps, Reactor Header Assemblies, Pressurizers and Bleed condensers etc.

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	NUCLEAR ISLAND MEGA EPC PACKAGE FOR MBRAPP-3&4

7. Supply & Erection of D2O Heat Exchanger package, PDHRS Condensers and Moderator Heat Exchangers.
8. Supply & Erection of ECCS Accumulators & D2O Storage Tanks.
9. Supply & Erection of Primary System Pumps, Blowers and Compressor package.

3.2 Sub Module S2 (Nuclear Ventilation Package):

The scope of Contractor consists of system design, engineering, manufacture, quality assurance, supply, erection, examination, testing, balancing of air Flows, commissioning and handing over of the systems at site for systems listed below:

1. Primary Containment (PC) Ventilation System.
2. Secondary Containment Ventilation, Clean up & Purge Air System.
3. Primary Containment Controlled Discharge System (PCCD).
4. Reactor Building Vapor recovery and Condensate collection system.
5. FM Vault and Pump Room atmosphere and Low Enthalpy area cooling system.
6. Reactor Auxiliary Building (RAB) AC and Ventilation System.
7. AC and Ventilation System of SAB including DG room.
8. WMP, FM and Mechanical Workshop and SLM AC and Ventilation System.
9. Control Building AC and Ventilation including emergency fresh air ventilation system for MCR.
10. Fire Water Pump House (FWPH) Ventilation system.
11. Safety Related Pump House (SRPH) Ventilation system.
12. Safety Related Electrical House SREH Ventilation System
13. Exhaust Ventilation System for Heavy Water Evaporation & Clean-up plant and Upgrading plant building
14. New Fuel Bulk Storage Building Ventilation system
15. TBEB A/C and Ventilation System
16. Post-Accident Hydrogen Management System.

3.3 Sub Module S3 (Common Service Package):

The scope of Contractor consists of supply, erection and commissioning of the following systems

1. Light Water Systems.
 - Fire suppression system and portable fire extinguishers.
 - Domestic water system
 - DM water system
 - Fuel Oil storage and transfer system
 - Service water system
 - Non-active drainage system
2. Compressed Air & Dryer System.
2. Chillers & chilled water distribution.
3. Heavy Water Upgrading plant, Clean-Up Plant and Downgraded D2O Storage Facility.
4. Waste Management Plant.

Note: - MOF Sampling System, OESC Equipment, and NSDF Facilities (Gantry Crane, Incineration System, MDU & Steel Chimney) are common for MBRAPP Units 1 to 4; however, their scope shall be considered only under the MBRAPP-1&2 package.

	ANUSHAKTI VIDHYUT NIGAM LTD. (ASHVINI) (Joint Venture NPCIL and NTPC Limited)
	NUCLEAR ISLAND MEGA EPC PACKAGE FOR MBRAPP-3&4

3.4 Sub Module S4 (Plant Water Systems Package):

This sub-module consists of civil, mechanical, material handling, ventilation, C&I and electrical works including design, engineering, supply of the equipment, erection of equipment and commissioning of the following system by the contractor:

1. Filtration and RO based DM Plant, DM water and Domestic water distribution system within terminal point.
2. PTP and PWS Piping from OSP To all utilities for MBRAPP-3&4
3. Chlorine dioxide system includes plant and complete distribution.
4. NDCT Acid Dosing Plant (NDCT ADP)
5. Material handling arrangements, Air & Ventilation systems, Portable Fire extinguishers, control & instrumentation, and electrical works for all above structures, pump houses and buildings.

3.5 Sub Module S5 (Chilled Water Plant for Reactor Building High Enthalpy Area Cooling)

This Sub-Module covers the Design & Engineering of Chillers, Pumps etc. and their foundations, Manufacturing, Pre-fabrication, Supply, Transportation, Handling, Storing, Cleaning, Field-welding, Erection / Construction, Inspection, examination & testing, painting, insulation of pipelines, valves, pumps, complete electrical and C&I works as per BOQ and specification, casting of foundations for chillers and pumps, etc., assistance during commissioning, complete commissioning of Chillers, Pumps, trial operation, performance guarantee (PG), handing over of complete system.

3.6 Sub Module S7 (Distillation Column)

The Contractor shall be fully responsible for the manufacture, supply, testing, and transportation of distillation column assemblies along with supervision of erection. The scope includes fabrication of PB wire mesh, cleaning, internal packing, activation, and performance testing of column sections. It also covers arrangement of technology transfer from BARC, submission of drawings and QA documents for approval, and compliance with all applicable specifications and quality standards. Delivery of equipment to site and supervision during erection and commissioning are included.

4. Module M4: Electrical Module

4.1 Sub Module S1 (Main Plant Electrical System):

This sub-module covers the supply, erection, testing, and commissioning of various electrical equipment of the Main Plant Electrical System on EPC basis. Being an NPCIL-engineered system, system-level engineering has been carried out by NPCIL, and the Bill of Materials (BOM) has been provided in the tender. Major equipment/items/systems covered under this sub-module include Auxiliary Transformers, Switchgears, PMCCs, MCCs, Busducts, Distribution Boards, Protection Panels, SCADA, UPS, Inverters, Electrical Penetration Assemblies for RBs (for Electrical and C&I systems), Cables, Cable Trays and Supports, Lighting System, Elevators, etc. However, Local Distribution Boards and Inverter Batteries of NTC & OESC are not included in MBRAPP 3 & 4, as these scopes are already covered under NIMEP MBRAPP 1 & 2.

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	NUCLEAR ISLAND MEGA EPC PACKAGE FOR MBRAPP-3&4

4.2 Sub Module S2 (400 KV and 220 KV Switchyard)

This sub-module covers design, engineering, supply, erection, testing, and commissioning for extension and augmentation of 220 kV and 400 kV switchyards, transformer yards, and 400 kV transmission lines within the Main Plant area of MBRAPP, including associated civil and structural works, on EPC lump sum basis. Since the sub-module is to be executed on an EPC lump sum basis, system-level engineering shall be carried out by the Contractor, and the detailed BOQ shall be derived during the execution stage. Major equipment/items/systems covered under this sub-module include Circuit Breakers, Isolators, Current Transformers, Surge Arresters, EHV Cables, Insulators, gantry towers, equipment support structures, SCADA panels, Protection and Control Panels, Cables, Cable Trays and Supports, Lighting System, etc. However, it may be noted that while MBRAPP 1 & 2 comprise 18 bays, MBRAPP 3 & 4 comprise 8 bays; accordingly, the quantity of equipment has been reduced in NIMEP 3 & 4.

4.3 Sub Module S3 (Power Transformers and Shunt reactors)

This sub module covers design, engineering, manufacturing, testing, supply, erection & commissioning of 400 KV Generator Transformers, Unit Transformers and 220 KV Startup Transformers. However, 400KV Shunt reactor is already covered in NIMEP 1&2 hence deleted in NIMEP 3&4.

4.4 Sub Module S4 (Diesel Generator)

This sub module covers design, engineering, manufacturing, inspection and testing of DG sets at contactors' workplace, packing, supply, transportation, erection and commissioning of 4 nos. of 4200 KW Emergency DG sets/unit, 200 KVA DG set/unit, associated systems and Firefighting system. This package will be operated as Lump-sum package. Out of 4 no's of EDG set/unit, 2 no's will be process water cooled and 2 no's will be air radiator cooled.

5. Module M5: C&I Module

This module consists of two Sub Modules:

- 1) M5-S1: Control Centre Instrumentation (CCI) Sub Module.
- 2) M5-S2: Field Instrumentation (FI) Sub Module.

5.1 Sub Module M5-S1: Control Centre Instrumentation (CCI) Sub Module:

M5-S1 sub module consists of design, engineering, supply, storage, assembly, fabrication, erection, integration, inspection, testing and commissioning, verification and validation of Control Center Instrumentation (CCI) systems like, Computer Based System (CBS), CBS Group-I: NPCIL Engineered CBS, CBS Group-II: Contractor/Vendor engineered CBS, Non-Computer Based System (NCBS), Fuel Handling Control System (FHCS), Control Room (MCRP, OCs, SCRPs, WAP, LVS Panel, Video Wall, desks), Power Supply Distribution (CPSDP / DCDB), Condition Monitoring System (CMS), Prototype Panels and Systems, Cabinets, Cables, Network Components, Spares (Mandatory / Commissioning), Programming and Development Tools for 2 units of 700MWe Nuclear Power Plants at MBRAPP-1&2 in Banswara, Rajasthan. Detailed scope of CCI Sub Module (M5-S1) is covered in different sections of tender documents.

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5.2 Sub Module M5-S2 (Field Instrumentation):

M5-S2 sub module consists of engineering, supply, storage, assembly, fabrication, erection, integration, inspection, testing and commissioning, independent verification and validation of Field Instrumentation Devices/Equipment, Industrial Systems, Programmable Logic Control Systems and Standalone I&C systems, and Nuclear Power Plant (NPP)-specific I&C systems for 2 units of 700 MWe Nuclear Power Plants at MBRAPP- 3&4 in Banswara, Rajasthan. Detailed scope of FI Sub Module (M5-S2) is covered in different sections of tender documents.

6. Module M6: Lab, Workshop and other O&M Facilities Module

Module (M6) has scopes related to Laboratory, Workshop and other O&M Facilities and consist of six sections:

- i. **MMU - Mechanical Maintenance Unit Workshop Establishment:**
Mechanical maintenance Workshop Establishment covers supply, erection, commissioning, demonstration of functional testing of mechanical maintenance workshop machines with accessories, equipment, tools & tackles and material handling devices.
- ii. **EMU - Electrical Maintenance Unit Workshop Establishment:**
Electrical Maintenance workshop Establishment section covers supply, demonstration of functional testing of Electrical maintenance workshop equipment, tools & tackles and testing kits.
- iii. **FHU- Fuel Handling Unit Workshop Establishment:**
Fuel handling workshop Establishment section covers Design & manufacturing, supply, demonstration of functional testing of Fuel maintenance workshop equipment, tools & tackles and testing kits.
- iv. **HPU -Health Physics Unit Establishment:**
Health Physics Unit Establishment section covers supply, commissioning, demonstration of functional testing of Health Physics workshop measuring sensors & devices.
- v. **CHEM LAB -Chemical Lab Establishment:**
Chemical Lab Establishment section covers supply, commissioning, and functional testing demonstration of Chemical lab workshop measuring sensors and devices.
- vi. **FUR -Furniture Establishment:**
Furniture Establishment covers supply with logistics, assembly of furniture for various workshops & location of plant.

Package shall be executed as per the requirements spelt out in the respective modules & submodule. In all correspondence of this tender, respective module & sub module shall be referred.

The respective module & its sub module will govern by technical specification / requirements. Interchangeability / cross reference request by contractor (if any) will be at sole discretion of the PURCHASER. The request for the same shall be justified with proper supporting documentation and tender clauses with page number by bidder if he wishes to use clauses from another Module/Sub module.

PROJECT INFORMATION:

The proposed project consists of four units of Pressurized Heavy Water Reactors (PHWRs) of 700 MWe each called as Mahi Banswara Rajasthan Atomic Power Project –Units 1 to 4 (MBRAPP -Units -1 to 4) at Mahi Banswara in Banswara district of Rajasthan state. The scope of works and allied activities as proposed is for MBRAPP Unit - 1 & 2, Common Building & Structures, MBRAPP-3&4 and other scopes as specified:

1.	Owner / Purchaser	Anushakti Vidhyut Nigam Limited Ltd. (ASHVINI)
2.	Project Title	4 x 700 MWe PHWR – Mahi Banswara Rajasthan Atomic Power Project Units # 1&2 and 3&4
3.	Location	Napla, Chhoti Sarwan Tehsil, Banswara District, Rajasthan State
4.	Elevation above mean sea level	Varies from RL+316 m to RL+296 m
5.	Nearest Railway Station	Ratlam Railway Station (Kota Ratlam Section)
6.	Road Access	The site is located about 23 km by road from district headquarter Banswara and connected with NH27 road. The Nearest Rail Head is Ratlam railway station on Kota - Ratlam section of western Railway at about 60km by Road.
7.	Transport	Rail and Road
8.	Infrastructure facilities	There are no major industries within 5 kms radially.
9.	Ambient Air Temperatures	
	A) Maximum Temperature	47.5 °C
	B) Minimum Temperature	2.8 °C
10.	Relative humidity	
	A) Mean Humidity	72 to 80%
	B) Maximum and Minimum	Max: 97%, Min 4%
11.	Air Quality	Clean and Free from chemical pollutants
12.	Rainfall - Annual average	1003.5 mm
13.	Seismology	Site falls in seismic zone – II as per seismic zoning map of India, IS 1893(Part 1) ;1984 (Reaffirmed 2021)

<To be submitted on company letterhead>

UNDERTAKING

Ref: Tender No. **MBRAPP/CMM/2026/NIMEP/01**

Date:

I/We hereby acknowledge the receipt of Section-C (Technical Specifications and Drawings) against Tender No. _____ / through Memory Stick i.e. Pen-drive.

I/We also certify that complete technical details/Specifications/Drawings as detailed in the Index of Section-C have been received, checked, verified and found in order in the Memory Stick i.e. Pen-drive.

Signature: _____

Name of Authorized Signatory:

Company Name and Seal of the Tenderer:

Tender No. MBRAPP/CMM/2026/NIMEP/01**FOR MBRAPP-1&2****Index of Section C**

Mod ule no.	Module Name	Sub Module no.	Sub Module Name	Location
M1	Civil Module	S1	Main Plant Civil	//section C/M1S1
		S2	NDCT	//section C/M1S2
		S3	IDCT	//section C/M1S3
		S4	Misc. Civil Works	//section C/M1S4
M2	Reactor Module	S1	Reactor Components	//section C/M2S1
		S2	Cranes, Hoists and Feeder Header Insulation Cabinets	//section C/M2S2
		S3	Site Erection and Installation	//section C/M2S3
		S4	Fuel Handling System Components	//section C/M2S4
M3	Nuclear and Mechanical System Module	S1	Primary Piping (PP)	//section C/M3S1
		S2	Nuclear Ventilation (NV)	//section C/M3S2
		S3	Common Services (CS)	//section C/M3S3
		S4	Plant Water Systems (PWS)	//section C/M3S4
		S5	Chilled Water Plant for Reactor Building High Enthalpy Area Cooling.	//section C/M3S5
		S6	Additional Wastewater Management	//section C/M3S6
		S7	Distillation Column Supply and Erection	//section C/M3S7
M4	Electrical Module	S1	Main Plant Electrical System	//section C/M4S1
		S2	Switchyard	//section C/M4S2
		S3	Power Transformers and Shunt Reactors	//section C/M4S3
		S4	Diesel Generators	//section C/M4S4
		S5	OESC Electrical	
M5	Control & Instrumentation Module	S1	Control Centre Instrumentation (CCI)	//section C/M5S1
		S2	Field Instrumentation (FI)	//section C/M5S2
M6	Lab, Workshop & Another O&M Facilities Module	S1	Lab, Workshop & Other O&M Facilities	//section C/M6S1

Bidder to check the separate index provided for drawings, specification, procedure, VSS, Data sheet etc. for respective sub module.

Tender No. MBRAPP/CMM/2026/NIMEP/01**FOR MBRAPP-3&4****Index of Section C**

Module no.	Module Name	Sub Module no.	Sub Module Name	Location
M1	Civil Module	S1	Main Plant Civil	//section C/3&4/M1S1
		S2	NDCT	//section C/3&4/M1S2
		S3	IDCT	//section C/3&4/M1S3
		S4	Misc. Civil Works	//section C/3&4/M1S4
M2	Reactor Module	S1	Reactor Components	//section C/3&4/M2S1
		S2	Cranes, Hoists and Feeder Header Insulation Cabinets	//section C/3&4/M2S2
		S3	Site Erection and Installation	//section C/3&4/M2S3
		S4	Fuel Handling System Components	//section C/3&4/M2S4
M3	Nuclear and Mechanical System Module	S1	Primary Piping (PP)	//section C/3&4/M3S1
		S2	Nuclear Ventilation (NV)	//section C/3&4/M3S2
		S3	Common Services (CS)	//section C/3&4/M3S3
		S4	Plant Water Systems (PWS)	//section C/3&4/M3S4
		S5	Chilled Water Plant for Reactor Building High Enthalpy Area Cooling.	//section C/3&4/M3S5
		S7	Distillation Column Supply and Erection	//section C/3&4/M3S7
M4	Electrical Module	S1	Main Plant Electrical System	//section C/3&4/M4S1
		S2	Switchyard	//section C/3&4/M4S2
		S3	Power Transformers and Shunt Reactors	//section C/3&4/M4S3
		S4	Diesel Generators	//section C/3&4/M4S4
M5	Control & Instrumentation Module	S1	Control Centre Instrumentation (CCI)	//section C/3&4/M5S1
		S2	Field Instrumentation (FI)	//section C/3&4/M5S2
M6	Lab, Workshop & Another O&M Facilities Module	S1	Lab, Workshop & Other O&M Facilities	//section C/3&4/M6S1

Bidder to check the separate index provided for drawings, specification, procedure, VSS, Data sheet etc. for respective sub module.