

SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM

Process Description

The latest environmental norms as per Gazette notification dated 7th December 2015 requires that the NO_x emissions from thermal power plants installed after 1 January 2017 shall not exceed 100 mg/Nm³.

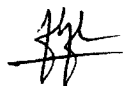
To meet the above statutory requirement on NO_x, a de-nitrification system namely a Selective Catalytic Reduction System is envisaged.

The SCR System reduces the emission of NO_x in flue gas produced in a coal fired boiler to the limits specified elsewhere in the technical specification. The SCR reactor is located between Economiser and Air Pre-heater.

Flue gas generated in boiler goes through downstream of economizer and taken through two (02) independent SCR streams. Each stream shall have one (01) number of SCR Reactor. Air diluted gaseous ammonia shall be injected before SCR reactor. The mixture of flue gas & ammonia shall be passed through the catalysts placed in layers inside reactor for reduction of NO_x present in flue gas. The flue gas passes the reactor inlet system and the catalyst from top and flows to the bottom of the SCR reactor. Flue gas after NO_x removal is taken to the Air Pre-heater.

SCR System along with ammonia injection system shall be individual for each unit. Ammonia unloading, storage and handling system shall be common for all units.

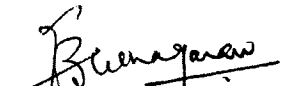
Ammonia shall be supplied through tank truck and unloaded in ammonia storage tanks with the use of ammonia unloading compressors. Liquid ammonia from the storage tank is sent through ammonia vaporizer and diluted with air before injection on upstream of SCR reactor.



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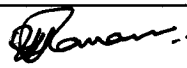
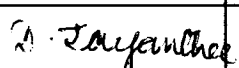
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MARKETING (FB)

SPECIFICATION FOR PROVENNESS / QUALIFICATION OF DENO_x
SYSTEM USING SCR / HYBRID (SCR & SNCR) SYSTEM FOR
NTPC / PATRATU 3X800MW PROJECT

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00	26.10.2016	INITIAL ISSUE	V.R.P	D.J	P.S.S
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USING SCR / HYBRID (SCR & SNCR) SYSTEM FOR NTPC / PATRATU 3X800MW PROJECT**

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4.23 Selective Catalytic Reduction System

The Bidder/Bidder's sub-vendor should meet the qualifying requirements stipulated in any one of the qualifying routes i.e. Route-1 (clause 4.23.1) or Route-2 (clause 4.23.2) or Route-3 (clause 4.23.3) including requirements stipulated in sub clauses of respective Route.

4.23.1 Route-1 Qualified Selective Catalytic Reduction (SCR) System Manufacturer/Supplier (QSCRM)

The Bidder/Bidder's sub-vendor should have designed, engineered, manufactured/got manufactured/supplied, erected/supervised erection and commissioned/supervised commissioning of at least one (1) no. of ammonia based SCR System, consisting of SCR reactor & Ammonia injection system, with NOx reduction efficiency of not less than 75%, operating in conjunction with pulverized coal fired steam generator for 500MW or higher capacity unit or having minimum 1500T/hr steaming capacity. Further, such SCR System should have been in successful operation for a period not less than one (1) year.

4.23.2 Route-2 Steam Generator Manufacturer / Indian JV company of Steam Generator manufacturer/ Indian Subsidiary Company of Steam Generator manufacturer

a (i) The Bidder/Bidder's sub-vendor should have designed, engineered, manufactured/got manufactured, erected/ supervised erection and commissioned/supervised commissioning of least one (1) no. of pulverized coal fired steam generator for 200MW or higher capacity unit or having minimum 600T/hr steaming capacity. Further, such Steam Generator should have been in successful operation for a period not less than one (1) year.

Alternatively

a (ii) The Bidder/Bidder's sub-vendor shall be a Joint Venture (JV) Company incorporated in India under the Companies Act of India, as on the date of techno-commercial bid opening, promoted by (i) an Indian Company registered in India under the Companies Act of India and (ii) a Steam Generator Manufacturer meeting requirements of clause 4.23.2 a(i), created for the purpose of manufacturing in India steam generator sets.



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The Steam Generator Manufacturer shall maintain a minimum equity participation of 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company and One of the promoters shall be a majority stakeholder who shall maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of defect liability period of the contract whichever is later. Further, Bidder/Bidder's sub-vendor should have executed/executing orders related to Steam Generators, in the last 5 years, with the total value of such projects being INR 5,000 million or more.

Alternatively

a) (iii) The Bidder/Bidder's sub-vendor shall be an Indian Subsidiary Company of a Steam Generator Manufacturer meeting requirements of clause 4.23.2 a(i), registered in India under the Companies Act of India, as on the date of techno-commercial bid opening, for manufacturing Steam Generator sets. The subsidiary Company shall remain a subsidiary company of the Steam Generator Manufacturer for a minimum period of 7 years from the date of incorporation of such Subsidiary Company or up to the end of defect liability period of the contract whichever is later. Further, Bidder should have executed/executing orders related to Steam Generators, in the last 5 years, with the total value of such projects being INR 5,000 million or more.

b) Bidder/Bidder's sub-vendor should also have a valid ongoing collaboration and technology transfer agreement with a QSCRM meeting requirements of clause 4.23.1 on its own, valid minimum up to the end of the defect liability period of the contract.

c) The Bidder shall be required to furnish an undertaking jointly executed by the Bidder, its sub-vendor (if applicable) and the QSCRM for the successful performance of SCR system, as per the format enclosed with the bidding documents in which the QSCRM and the Bidder and its sub-vendor (if applicable) are jointly and severally liable to the Employer to perform contractual obligations including the technical guarantees for the complete SCR system. The Deed of Joint Undertaking (DJU) shall be submitted prior to the placement of order on the approved sub vendor. In case of award, QSCRM and Bidder's sub-vendor (if Applicable) shall each be required to furnish an on demand bank guarantee for INR 24 million (Twenty Four Million only) in addition to the contract performance security to be furnished by the bidder.



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4.23.3 Route-3 EPC Organization

a) The Bidder/Bidder's sub-vendor should be an Engineering, Procurement and Construction (EPC) organization and should have executed, in the last 10 years, large industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer, Flue gas denitrification system and / or any other process industry with the total value of such projects being INR 5,000 million or more. At least one of such projects should have a contract value of INR 2,000 million or more. These projects shall be in successful operation for a period of not less than one (1) year.

b) Bidder/Bidder's sub-vendor should also have a valid ongoing collaboration and technology transfer agreement with a QSCRM meeting requirements of clause 4.23.1, valid minimum up to the end of the defect liability period of the contract. In such a case Bidder/Bidder's sub-vendor shall either source the SCR system from such manufacturer or manufacture/get manufactured the SCR System as per the design and manufacturing drawings released by such QSCRM.

c) The Bidder shall be required to furnish an undertaking jointly executed by the Bidder, its sub-vendor (if applicable) and the QSCRM for the successful performance of SCR system, as per the format enclosed with the bidding documents in which the QSCRM and the Bidder and its sub-vendor (if applicable) are jointly and severally liable to the Employer to perform contractual obligations including the technical guarantees for the completer SCR system. The Deed of Joint Undertaking (DJU) shall be submitted prior to the placement of order on the approved sub vendor. In case of award, QSCRM and Bidder's sub-vendor (if Applicable) shall each be required to furnish an on demand bank guarantee for INR 24 million (Twenty Four Million only) in addition to the contract performance security to be furnished by the bidder.

4.24 Provenness criteria for critical equipment(s) and bought out items for SCR system

4.24.1 Ammonia handling and storage system for SCR

The Bidder/Bidder's sub-vendor should have designed, engineered, manufactured/ got manufactured/ supplied, erected/ supervised erection and commissioned/ supervised commissioning of at least one (1) no. of anhydrous ammonia storage and handling system for SCR system operating in conjunction with coal fired steam generating units, rated for a minimum of 500MW unit size or minimum 1500T/hr steaming capacity. The above System should have been in successful operation for a period not less than one (1) year.



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4.24.2 Catalyst for SCR system

Catalyst for SCR system shall be supplied only from such catalyst manufacturer who has designed, engineered, manufactured, supplied plate type catalyst for SCR system which is operating in conjunction with pulverised coal fired steam generator for 500MW or higher capacity unit or with steam generator having minimum 1500T/hr steaming capacity. Further, such plate type catalyst in a SCR System should have been in successful operation for a period of atleast 16000hrs without any replacement during this period.

4.24.3 SNCR system :- (Applicable in case Bidder proposed hybrid system i.e. SCR with SNCR)

The Bidder/Bidder's sub-vendor should have designed, engineered, manufactured/got manufactured/supplied, erected/supervised erection and commissioned/supervised commissioning of at least one (1) no. of urea based SNCR System operating in conjunction with a pulverised coal fired steam generator for 500MW or higher capacity unit or for a pulverized coal fired steam generator having minimum 1500T/hr steaming capacity. Further, such SNCR System should have been in successful operation for a period not less than one (1) year.

4.24.4 Urea handling and storage system

The Bidder/Bidder's sub-vendor should have designed, engineered, manufactured/ got manufactured/ supplied, erected/ supervised erection and commissioned/ supervised commissioning of at least one (1) no. of urea storage and handling system for SNCR system operating in conjunction with a coal fired steam generating units, rated for a minimum of 500MW unit size or for a pulverized coal fired steam generator minimum 1500T/hr steaming capacity. The above System should have been in successful operation for a period not less than one (1) year.

NOTES:

A) Note to clause 4.23.1, 4.23.2 & 4.23.3

(1) "Qualified Selective Catalytic Reduction system Manufacturer (QSCRM)" means a manufacturer meeting requirements stipulated at 4.23.1.



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(2) The Bidder/ Bidder's sub-vendor shall also be considered qualified, in case the award for executing the reference works (SCR system) has been received by the Bidder/ Bidder's sub-vendor either directly from owner of plant or any other intermediary organization. However, a certificate from such owner of plant or any other intermediary organization shall be required to be furnished by the Bidder/ its sub-vendor in support of Bidder/ Bidder's subvendor claim of meeting the qualification requirement as per 4.23.1 or 4.23.2 or 4.23.3 above. Further, certificate from owner of the plant shall also be furnished by the Bidder/ Bidder's sub-vendor for the successful operation of the SCR System as specified at clause 4.23.1 or 4.23.2 or 4.23.3 above, whichever is applicable.

(3) Whenever the term 'coal fired' is appearing above, "Coal" shall be deemed to also include bituminous coal/brown coal/lignite.

(4) Holding Company as a Qualified Selective Catalytic Reduction system Manufacturer (QSCRM).

(i) A Holding Company, singularly or collectively along with its Subsidiaries (held either directly or indirectly), meeting the requirements of clause 4.23.1 above shall also be considered as QSCRM.

(ii) In such a case, if the Holding Company is an Associate/Collaborator for Bidder or Bidder's sub-vendor as a QSCRM, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company for meeting the requirements of clause 4.23.1 above should necessarily be part of the DJU being submitted by the Bidder for successful performance of the contract as per format enclosed with the bidding documents. The Deed of Joint Undertaking (DJU) shall be submitted prior to the placement of order on the approved vendor. Further, in such a case the Holding Company and all such entities lending strength / experience to the Holding Company for meeting the requirements of clause 4.23.1 above shall each be required to furnish separate on demand bank guarantees for INR 24Million (Indian Rupees Twenty Four Million only) divided equally among them, in addition to the contract performance security to be furnished by the Bidder. This bank guarantee requirement shall supersede bank guarantee requirement stipulated at clause 4.23.2 (c) & 4.23.3 (c) for the QSCRM.

(iii) In case the Holding Company itself is the Sub-Vendor as a QSCRM as per clause 4.23.1, the Holding Company shall submit its board resolution stating that in case of any likely change of management control of any of these subsidiaries lending strength / experience to the Holding Company for meeting the requirements of clause 4.23.1 above, the Sub-Vendor shall arrange for separate on demand bank guarantees as per the format enclosed with the bidding documents from all such entities lending strength / experience to the Holding Company for



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fulfillment of requirement of clause 4.23.1, above for an amount aggregating INR 24 Million (Indian Rupees Twenty Four Million only) before the change in management control actually occurs.

B) Technology Transfer Agreement (Applicable for Clause 4.23.2 & 4.23.3)

The technology transfer agreement shall necessarily cover transfer of technological know-how for SCR System in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company.

C) Note to clause 4.23.2/ 4.23.3 & 4.24.1

In case QSCRM of 4.23.2/ 4.23.3 also meets the requirement of 4.24.1 and the Technology Licensing & Transfer agreement as per clause 4.23.2(b)/ 4.23.3(b) covers Ammonia handling & storage system, in such a case Bidder/Bidder's subvendor qualified as per 4.23.2/4.23.3 can also either source the Ammonia handling & storage system from such QSCRM or manufacture/get manufactured the Ammonia handling & storage system as per the design and manufacturing drawings released by such QSCRM.

D) Note to clause 4.23, 4.24

i) In case Bidder propose to offer a hybrid of SCR and SNCR De-Nox system then Bidder/ Subvendor shall meet requirement stipulated at clause no. 4.23 and 4.24.3.

ii) In case Bidder/subvendor (s) propose to procure SCR system/SNCR system/Ammonia handling and storage system/urea handling and storage system from different vendors, In such a case these vendors shall meet the respective provenness criteria stipulated under clause no. 4.23/4.24.3/4.24.1/ 4.24.4.

REMARKS:

For the above clauses, kindly note the following definitions:

"Bidder" means Bharat Heavy Electricals Ltd (BHEL)

And

"Bidder's Sub-vendor" means Prospective DeNox Vendor

5.0.0 Selective Catalytic Reduction System

A. FOR BIDDER/ BIDDER'S SUB-VENDOR SEEKING QUALIFICATIONS AS PER CLAUSE 4.23.1 OF THE SUB-SECTION-IA, PART-A OF SECTION-VI.

We / proposed sub-vendor meet the requirement of Clause 4.23.1 of the Sub-section-IA, Part-A of Section-VI and to satisfy this requirement, we declare the following:

We / proposed sub-vendor (M/s.....) have designed, engineered, manufactured/ got manufactured/ supplied, erected/supervised erection and commissioned/supervised commissioning of atleast one number of ammonia based SCR System, consisting of SCR reactor & Ammonia injection system, with NOx reduction efficiency of not less than 75%, operating in conjunction with pulverized coal fired steam generator for 500 MW unit size or higher capacity unit or minimum 1500T/hr steaming capacity, which are in successful operation for a period not less than One (1) year. The details of above are as under:

S. No.	Item Description	Station-I
1.	Name of Client with full address, Fax No. & Tel. No.	
2.	Name of station & its location	
3.	Name of Package/Contract	
4.	Name of the Contractor on whom the order for executing the reference plant (SCR System) was placed by the Owner of the reference plant.	
5.	In case the Bidder/ his sub-vendor is not the Contractor at Sl.No. 4, Name of the Organisation which placed order for reference plant (Selective Catalytic Reduction System) on the Bidder / Sub-Vendor	
6.	Detail of Steam Generator/Unit for which Selective Catalytic Reduction System supplied.	
	(a) Unit Rating (MW)	
	(b) Whether pulverised coal fired steam generator	Yes/No
	(c) Steaming capacity of steam generator (T/hr.)	
7.	Date of Order	

Signature of authorized signatory.....

8. Date of Commissioning of SCR system
9. Type of SCR System (Whether same as now being offered) Yes/No
- 10.1 Design Efficiency of SCR system %
- 10.2 Inlet NO_x to SCR at 6%O₂ dry mg/Nm³
- 10.3 Outlet NO_x to SCR at 6%O₂ dry mg/Nm³
- 10.4 Inlet Dust burden to SCR Reactor g/ Nm³
- 10.5 Type of catalyst (Plate/honeycomb/corrugated) -----
- 10.6 Type of reagent (Aqueous Ammonia / Anhydrous Ammonia/urea)
- 10.7 Type of Ammonia injection system
11. Scope of Work ammonia based SCR system consisting of SCR reactor & Ammonia injection system included
- (a) Design Yes/No
- (b) Engineering Yes/No
- (c) Manufacturing/ got manufactured/ Supply -----
- (d) Erection/Supervised Erection -----
- (e) Commissioning/Supervised Commissioning -----
12. Whether scope of work include design, engineering, manufacturing/ got manufacture/ supply, erection/ got erection and commissioning of ammonia handling and storage system for SCR Yes/No
13. No. of years in successful operation of SCR system as on -----
14. Certificate from client in support of queries of Sl. No. 1 to 13 enclosed as Annex..... Yes/No
15. Certificate from Owner of the Plant (in case the Order is received from intermediary organization) Yes/No

(Signature)..... Date Place

Signature of authorized signatory.....

(Printed Name).....
(Designation).....
(Common Seal).....

**B. FOR BIDDER/ HIS SUB-VENDOR SEEKING QUALIFICATIONS AS PER
CLAUSE 4.23.2 OF THE SUB-SECTION-IA, PART-A OF SECTION-VI.**

Note : BIDDER IS REQUIRED TO FILL EITHER REQUIREMENT UNDER CLAUSE (I)(A)
OR CLAUSE (I)(B) OR CLAUSE (I)(C) BELOW, WHICHEVER IS APPLICABLE
ALONGWITH CLAUSE (II) AND CLAUSE (III).

**(I)(A) We / proposed sub-vendor meet the requirement of Clause 4.23.2(a)(i) of the
Sub-section-IA, Part-A of Section-VI and to satisfy this requirement, we
declare the following :**

We / proposed sub-vendor (M/s.....) have designed,
engineered, manufactured/ got manufactured, erected/ supervised erection and
commissioned/ supervised commissioning of atleast one number of pulverised coal
fired steam generator for 200MW or higher capacity unit or having minimum
600T/hr steaming capacity, which are in successful operation for a period not less
than One (1) year. The details of above are as under:

S. No.	Item Description	Station-I
1.	Name of Client with full address Fax No. & Tel No.	
2.	Name of station & its location	
3.	Name of Package/Contract	
4.	Name of the Contractor on whom the order for executing the reference plant was placed by the Owner of the reference plant.	
5.	In case the Bidder/ his sub-vendor is not the Contractor as per Sl.No.4 above, the name of organisation which has placed the order for reference plant on the Bidder/Sub-vendor	
6.	Details of Steam Generating Unit	
	(a) Unit Rating (MW)	
	(b) Whether pulverised coal fired steam generator	Yes/No
	(c) Steaming capacity of	

Signature of authorized signatory.....

steam generator (T/hr.)

7. Date of Order
8. Scope of Work
 - (a) Design Yes/No
 - (b) Engineering Yes/No
 - (c) Manufacturing/ got manufactured -----
 - (d) Erection/Supervised Erection -----
 - (e) Commissioning/Supervised Commissioning -----
9. Date of Commissioning
10. No. of years in successful operation
As on
11. Certificate from client in support of queries of Sl.No. 1 to 10 above is enclosed as Annex..... Yes/No
12. Certificate from Owner of the Plant (in case the Order is received from intermediary organization) Yes/No

(I)(B) We / proposed sub-vendor meet the requirement of Clause 4.23.2(a)(ii) of sub-section-IA, Part-A of Section -VI, and to satisfy this requirement, we declare the following:

We / proposed sub-vendor are a Joint Venture (JV) company incorporated in India under the Companies Act of India, as on the date of techno-commercial bid opening, created for the purpose of manufacturing steam generator sets in India.

The Joint Venture (JV) Company is promoted by (i) M/s _____ an Indian Company registered in India under the Companies Act of India and (ii) M/s. _____ a Steam Generator Manufacturer who meets the requirements as per details furnished in Clause 4.23.2 a(i) of the Sub-section-IA, Part-A of Section-VI.

We confirm that M/s _____ (the Steam Generator Manufacturer) have a minimum equity participation of 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company.

Further, M/s _____, one of the promoter is majority stakeholder who have a minimum equity participation of 51% in the JV

Signature of authorized signatory.....

Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of defect liability period of the contract whichever is later.

Also, we / proposed sub-vendor have executed/ executing orders related to Steam Generators, in the last 5 years, with the total value of such projects being INR 5,000 million or more.

The details of the Joint Venture (JV) company are as follows:

Sl.No.	Item Description
1.	Name of JV Company
2.	Date of incorporation of JV Company in India under the companies act of India and purpose of creation
3.	Name of promoter of JV i.e. Indian company Registered in India
4.	Name of Steam generator manufacturer Meeting requirement of 4.23.2.a(i) of the Sub-section-IA, Part-A of Section-VI (Please fill details as per B(I)(A) above)
5.	Equity participation of Steam Generator Manufacturer in the JV Company (In percentage of the total equity)
6.	Lock in period for above equity participation from the date of incorporation (Bidder to furnish documentary evidence for their equity participation in the JV Company along with lock in period of such equity in compliance to clause 4.23.2 a(ii) of the Sub-section-IA, Part-A of Section-VI, supported by Board Resolution of the Steam Generator manufacturer)
7.	Name of company who is having Equity more than 51% in JV Company And Equity %
8.	Lock in period for above equity participation from the date of incorporation

Signature of authorized signatory.....

(Majority Stake Holder to furnish documentary evidence for their equity participation in the JV Company along with lock in period of such equity in compliance to clause 4.23.2 a(ii) supported by Board Resolution of the Majority Stake Holder)

9. Copy of Certificate of Incorporation and Memorandum of Association of JV company is enclosed at Annex.....

The details of orders executed/ under execution by JV company related to Steam Generators, in the last 5 years, with the total value of such projects being INR 5,000 million or more are as under:

S. No.	Item Description	Station-I	station-II	Station-III
1.	Name of Client with full address Fax No. & Tel No.			
2.	Name of station & its location			
3.	Name of Package/Contract			
4.	Name of the Company who has placed the order			
5.	Details of Steam Generating Unit			
	(a) Unit Rating (MW)			
	(b) Whether pulverised coal fired steam generator			Yes/No
	(c) Steaming capacity of steam generator (T/hr.)			
6.	Date of orders			
7.	Scope of Work			
8.	Completion date of orders			
9.	Total Value of the order (In equivalent INR)			
10.	Certificate from client in support of queries of Sl.No. 1 to 9 above is enclosed as Annex.....			Yes/No

Signature of authorized signatory.....

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(I)(C) We / proposed sub-vendor meet the requirement of Clause 4.23.2(a)(iii) of sub-section-IA, Part-A of Section -VI, and to satisfy this requirement, we declare the following:

We / proposed sub-vendor are an Indian Subsidiary Company of a Steam Generator Manufacturer meeting requirements of clause 4.23.2 a(i) of the Sub-section-IA, Part-A of Section-VI, registered in India under the Companies Act of India, as on the date of techno-commercial bid opening, for manufacturing Steam Generator sets.

We confirm that the subsidiary Company is a subsidiary company of the Steam Generator Manufacturer for a minimum period of 7 years from the date of incorporation of such Subsidiary Company or up to the end of defect liability period of the contract whichever is later.

Further, we/ proposed sub-vendor have executed/executing orders related to Steam Generators, in the last 5 years, with the total value of such projects being INR 5,000 million or more.

The details of the Subsidiary Company of a Steam Generator Manufacturer are as follows:

Sl.No.	Item Description	
1.	Name of the Steam Generator Manufacturer Meeting requirement of 4.23.2.a(i) of the Sub-section-IA, Part-A of Section-VI (Pl fill details as per B(I)(A) above)	
2.	Name of Indian Subsidiary Company with registration details	
3.	Address, Fax No. and Tel. No. of Subsidiary Company	
4.	Equity Lock in period for 7 years from the date of incorporation/ up to defect liability period (Bidder to furnish documentary evidence for their equity lock in period)	Yes/ No

The details of orders executed/ under execution related to Steam Generators, in the last 5 years, with the total value of such projects being INR 5,000 million or more are as under:

S. No.	Item Description	Station-I	Station-II	Station-III
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Signature of authorized signatory.....

1.	Name of Client with full address Fax No. & Tel No.	
2.	Name of station & its location	
3.	Name of Package/Contract	
4.	Name of the Company who has placed the order	
5.	Details of Steam Generating Unit	
	(a) Unit Rating (MW)	
	(b) Whether pulverised coal fired steam generator	Yes/No
	(c) Steaming capacity of steam generator (T/hr.)	
6.	Date of orders	
7.	Scope of Work	
8.	Completion date of orders	
9.	Total Value of the order (In equivalent INR)	
10.	Certificate from client in support of queries of Sl.No. 1 to 9 above is enclosed as Annex.....	Yes/No

(II) In order to meet the requirement of Clause 4.23.2(b) of sub-section-IA, Part-A of Section-VI, we further declare the following:

We / proposed sub-vendor have a valid ongoing collaboration and technology transfer agreement with M/s _____ (QSCRM) meeting requirements of clause 4.23.1 of the Sub-section-IA, Part-A of Section-VI, on its own, which is valid minimum up to the end of the defect liability period of the contract. Copy of ongoing collaboration and technology transfer agreement is enclosed at Annex.....(The details of QSCRM required to be filled as per clause A above)

(III) In order to meet the requirement of Clause 4.23.2(c) of sub-section-IA, Part-A of Section-VI, we further declare the following:

Signature of authorized signatory.....

We are enclosing Deed of Joint Undertaking (DJU) executed between us, our sub-vendor (if applicable) and the QSCRM, as per clause 4.23.2 (c) of the Sub-section-IA, Part-A of Section-VI, at Annex..... to this Attachment, for the SCR system.

(Signature)..... Date Place
 (Printed Name).....
 (Designation).....
 (Common Seal).....

C. FOR BIDDER/ HIS SUB-VENDOR SEEKING QUALIFICATIONS AS PER CLAUSE 4.23.3 OF THE SUB-SECTION-IA, PART-A OF SECTION-VI.

- (I) We / proposed sub-vendor meet the requirement of Clause 4.23.3 (a) of the Sub-section-IA, Part-A of Section-VI and to satisfy this requirement, we declare the following:

We / proposed sub-vendor(M/s.....) are an Engineering, Procurement and Construction (EPC) organization, who have executed large industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petrochemical, fertilizer, Flue gas de-nitrification system and / or any other process industry with the total value of such projects being INR 5,000 million or more. Atleast one of such projects have a contract value of INR 2,000 million or more. Further, these projects are in successful operation for a period of not less than one (1) year.

Details of EPC projects executed in last 10 years:

Sl.No.	Item Description	Station-I	Station-II	Station-III
1.	Name of Client with full address Fax No. & Tel No.			
2.	Name of station & its location			
3.	Name of the responsible person in Owner's organisation			
4.	Contract No. & Date			
5.	Nature/area of EPC Project (Power/ Steel/ Oil & Gas / Petro chemical/ fertilizer/ other process industry) (please specify)			
6.	Scope of Work (Please also specify whether civil work is included)			
7.	Date of execution of Order			

Signature of authorized signatory.....

8. Date of Commissioning
 9. No. of years in successful operation.
 10. Contract value of project (In equivalent INR)
 11. Necessary documents/certificate
is support of above are attached
at Annexure..... of this Attachment.
-

- (II) In order to meet the requirement of Clause 4.23.3(b) of sub-section-IA, Part-A of Section-VI, we further declare the following:

We / proposed sub-vendor have a valid ongoing collaboration and technology transfer agreement with M/s _____ (QSCRM) meeting requirements of clause 4.23.1 of the Sub-section-IA, Part-A of Section-VI, which is valid for minimum up to the end of the defect liability period of the contract. Further, we/ proposed sub-vendor also confirm that we/ sub-vender shall either source the SCR system from collaborator or manufacture/ get manufacture the SCR System as per the design and manufacturing drawings released by collaborator. Copy of ongoing collaboration and technology transfer agreement is enclosed at Annex..... (The details of Collaborator (QSCRM) required to be filled as per clause A above)

- (III) We are enclosing Deed of Joint Undertaking (DJU) executed between us, our sub-vendor (if applicable) and the QSCRM, as per clause 4.23.3 (c) at Annex..... to this Attachment, for the SCR system.

(Signature)..... Date Place
(Printed Name).....
(Designation).....
(Common Seal).....

6.0.0 CRITICAL EQUIPMENT(S) FOR SCR & SNCR SYSTEM

6.1.0 Ammonia handling and storage system for SCR

FOR BIDDER/ BIDDER'S SUB-VENDOR SEEKING QUALIFICATIONS AS PER CLAUSE 4.24.1 OF THE SUB-SECTION-IA, PART-A OF SECTION-VI.

We / proposed sub-vendor meet the requirement of Clause 4.24.1 of the sub-section-IA, Part-A of section-VI and to satisfy this requirement, we declare the following:

We / proposed sub-vendor (M/s) have designed, engineered, manufactured/ got manufactured/ supplied, erected/ supervised erection and commissioned/supervised commissioning of atleast one number of anhydrous ammonia storage and handling system for SCR system, operating in conjunction with

Signature of authorized signatory.....

coal fired steam generating units, rated for minimum of 500MW unit size or minimum 1500T/hr steaming capacity, which are in successful operation for a period not less than One (1) year. The details of above are as under:

S. No.	Item Description	Station-I
1.	Name of Client with full address, Fax No. & Tel. No.	
2.	Name of station & its location	
3.	Name of Package/Contract	
4.	Name of the Contractor on whom the order for executing the reference plant (Ammonia handling and storage system for SCR system) was placed by the Owner of the reference plant.	
5.	In case the Bidder/ his sub-vendor is not the Contractor at Sl.No. 4, Name of the Organisation which placed order for reference plant (Ammonia handling and storage system for SCR) on the Bidder / Sub-Vendor	
6.	Detail of Steam Generator/Unit for which Ammonia handling and storage system for SCR supplied.	
	(a) Unit Rating (MW)	
	(b) Whether coal fired steam generator	Yes/No
	(c) Steaming capacity of steam generator (T/hr.)	
7.	Date of Order	
8.	Date of Commissioning	
9.	Type of Ammonia handling and storage system for SCR System (Anhydrous/ Aqueous)	----
10.	Scope of Work included for Ammonia handling and storage system for SCR System	
	(a) Design	Yes/No
	(b) Engineering	Yes/No

Signature of authorized signatory.....

- (c) Manufacturing/ got manufactured/ Supply -----
- (d) Erection/Supervised Erection -----
- (e) Commissioning/Supervised Commissioning -----
11. No. of years in successful operation of Ammonia handling and storage system for SCR System as on
12. Ammonia storage system capacity in M³
13. Ammonia supply capacity in Kg/hr
14. Certificate from client in support of queries of Sl. No. 1 to 13 enclosed as Annex..... Yes/No
15. Certificate from Owner of the Plant (in case the Order is received from intermediary organization)enclosed as Annex..... Yes/No
-
- (Signature)..... Date Place
- (Printed Name).....
- (Designation).....
- (Common Seal).....

6.2.0 Catalyst for SCR system

FOR BIDDER/ BIDDER'S SUB-VENDOR SEEKING QUALIFICATIONS AS PER CLAUSE 4.24.2 OF THE SUB-SECTION-IA, PART-A OF SECTION-VI.

We / proposed sub-vendor meet the requirement of Clause 4.24.2 of the sub-section-IA, Part-A of section-VI and to satisfy this requirement, we declare the following:

We / proposed sub-vendor (M/s)have designed, engineered, manufactured, supplied plate type catalyst for SCR system, operating in conjunction with pulverized coal fired steam generating units, rated for 500MW unit size or higher capacity unit or minimum 1500T/hr steaming capacity, which are in successful operation for atleast 16000hrs without any replacement during this period. The details of above are as under:

S. No.	Item Description	Station-I
1.	Name of Client with full address, Fax No. & Tel. No.	

Signature of authorized signatory.....

2. Name of station & its location
3. Name of Package/Contract
4. Name of the Contractor on whom the order for executing the reference plant (Catalyst for SCR system) was placed by the Owner of the reference plant.
5. In case the Bidder/ his sub-vendor is not the Contractor at Sl.No. 4, Name of the Organisation which placed order for reference plant (Catalyst for SCR system) on the Bidder / Sub-Vendor
6. Detail of Steam Generator/Unit for which Catalyst for SCR system supplied.
 - (a) Unit Rating (MW)
 - (b) Whether pulverised coal fired steam generator Yes/No
 - (c) Steaming capacity of steam generator (T/hr.)
7. Date of Order of catalyst for SCR system
8. Date of Commissioning
9. Inlet dust burden to SCR reactor g/Nm³
10. Type of Catalyst (i.e. plate type) & Pitch (in mm) for SCR system
11. Scope of Work included for Catalyst for SCR system
 - (a) Design Yes/No
 - (b) Engineering Yes/No
 - (c) Manufacturing/ Supply -----
12. No. of hours in successful operation without any replacement of catalyst
13. Certificate from client in support of queries of Sl. No. 1 to 12 enclosed as Annex..... Yes/No
14. Certificate from Owner of the Plant (in case the Order is received from Yes/No

Signature of authorized signatory.....

intermediary organization)enclosed as Annex.....

(Signature)..... Date Place
(Printed Name).....
(Designation).....
(Common Seal).....

6.3.0 SNCR system
(Applicable in case Bidder proposed hybrid system i.e. SCR with SNCR)

**FOR BIDDER/ BIDDER'S SUB-VENDOR SEEKING QUALIFICATIONS AS PER
CLAUSE 4.24.3 OF THE SUB-SECTION-IA, PART-A OF SECTION-VI.**

We / proposed sub-vendor meet the requirement of Clause 4.23 & 4.24.3 of the Sub-section-IA, Part-A of Section-VI and to satisfy this requirement, we declare the following:

(Pl. fill the applicable details required as per Clause 4.23 of the Sub-section-IA, Part-A of section-VI indicated above at clause 5.0.0)

We / proposed sub-vendor (M/s) have designed, engineered, manufactured/ got manufactured/ supplied, erected/ supervised erection and commissioned/ supervised commissioning of atleast one number of urea based SNCR system, operating in conjunction with pulverized coal fired steam generator for 500MW or higher capacity unit or for a pulverized coal fired steam generator having minimum 1500T/hr steaming capacity, which are in successful operation for a period not less than One (1) year. The details of above are as under:

S. No.	Item Description	Station-I
1.	Name of Client with full address, Fax No. & Tel. No.	
2.	Name of station & its location	
3.	Name of Package/Contract	
4.	Name of the Contractor on whom the order for executing the reference plant (Urea based SNCR system) was placed by the Owner of the reference plant.	
5.	In case the Bidder/ his sub-vendor is not the Contractor at Sl.No. 4, Name of the Organisation which placed order for	

Signature of authorized signatory.....

reference plant (Urea based SNCR system)
on the Bidder / Sub-Vendor

6. Detail of Steam Generator/Unit for which Urea based SNCR system supplied
 - (a) Unit Rating (MW)
 - (b) Whether pulverised coal fired steam generator Yes/No
 - (c) Steaming capacity of steam generator (T/hr.)
7. Date of Order for Urea based SNCR system
8. Date of Commissioning of Urea based SNCR system
9. Type of Urea based SNCR system Yes/No
- 10.1 No. & Capacity of urea solution Mixer tank (in m³)
- 10.2 No. & Capacity of urea solution storage tank (in m³)
- 10.3 No. & Location of urea injection point
- 10.4 No. of urea injection nozzle at each location
10. Scope of Work included for Urea based SNCR system
 - (a) Design Yes/No
 - (b) Engineering Yes/No
 - (c) Manufacturing/ got manufactured/ Supply -----
 - (d) Erection/Supervised Erection -----
 - (e) Commissioning/Supervised Commissioning -----
11. No. of years in successful operation of Urea based SNCR system
12. Whether scope of work include design, engineering, manufacturing/ got manufacture/supply, erection/ got erection and commissioning of Urea handling and storage system for SNCR Yes/No
13. Certificate from client in support of queries of Sl. No. 1 to 12 enclosed as Annex..... Yes/No
14. Certificate from Owner of the Plant (in case the Order is received from Yes/No

Signature of authorized signatory.....

intermediary organization)enclosed as Annex.....

(Signature)..... Date Place
(Printed Name).....
(Designation).....
(Common Seal).....

6.4.0 Urea handling and storage system

FOR BIDDER/ BIDDER'S SUB-VENDOR SEEKING QUALIFICATIONS AS PER CLAUSE 4.24.4 OF THE SUB-SECTION-IA, PART-A OF SECTION-VI.

We / proposed sub-vendor meet the requirement of Clause 4.24.4 of the Sub-section-IA, Part-A of Section-VI and to satisfy this requirement, we declare the following:

We / proposed sub-vendor(M/s) have designed, engineered, manufactured/ got manufactured/ supplied, erected/ supervised erection and commissioned/ supervised commissioning of atleast one number of Urea handling and storage system for SNCR system, operating in conjunction with a coal fired steam generating units, rated for a minimum of 500MW unit size or for a pulverized coal fired steam generator with minimum 1500T/hr steaming capacity, which are in successful operation for a period not less than One (1) year. The details of above are as under:

S. No.	Item Description	Station-I
1.	Name of Client with full address, Fax No. & Tel. No.	
2.	Name of station & its location	
3.	Name of Package/Contract	
4.	Name of the Contractor on whom the order for executing the reference plant (Urea handling and storage system) was placed by the Owner of the reference plant.	
5.	In case the Bidder/ his sub-vendor is not the Contractor at Sl.No. 4, Name of the Organisation which placed order for reference plant (Urea handling and storage system) on the Bidder / Sub-Vendor	
6.	Detail of Steam Generator/Unit for which Urea handling and storage systemsupplied (a) Unit Rating (MW)	

Signature of authorized signatory.....

(b)	Whether pulverised coal fired steam generator	Yes/No
(c)	Steaming capacity of steam generator (T/hr.)	
7.	Date of Order of urea handling and storage system	
8.	Date of Commissioning of urea handling and storage system	
9.	Type of Urea handling and storage system (solid/ liquid urea)	
10.	Scope of Work included for urea handling and storage system	
(a)	Design	Yes/No
(b)	Engineering	Yes/No
(c)	Manufacturing/ got manufactured/ Supply	-----
(d)	Erection/Supervised Erection	-----
(e)	Commissioning/Supervised Commissioning	-----
11.	No. of years in successful operation for urea handling and storage system as on	
12.	Certificate from client in support of queries of Sl. No. 1 to 11 enclosed as Annex.....	Yes/No
13.	Certificate from Owner of the Plant (in case the Order is received from intermediary organization) enclosed as Annex.....	Yes/No

(Signature)..... Date Place

(Printed Name).....

(Designation).....

(Common Seal).....

7.0.0 TO BE FILLED IN BY THE BIDDER/ PROPOSED SUBVENDOR (I.E. HOLDING COMPANY) MEETING REQUIREMENT OF CLAUSE 4.23.1 AND NOTE A(4) TO CLAUSE 4.23 of the Sub-section-IA, Part-A of Section-VI.

(Pl. fill the other relevant details as per the selected route as per format indicated at clause 5.0.0 above)

We/ Proposed sub vendor (M/s.....) are seeking qualification as holding company (singularly or collectively) with our subsidiaries (held either directly or indirectly) as per notes

Signature of authorized signatory.....

No.A (4) for clause no. 4.23.1 of the Sub-section-IA, Part-A of Section-VI. Further, the details of our subsidiaries meeting the requirements are as follows :

- 1 Ours and our Subsidiary(ies) Experience (To be filled as per 5.0.0 A indicated
Details in respect of meeting requirement of above)
Clause 4.23.1 of the Sub-section-IA, Part-A of
Section-VI
- 2 Name, Address, Tel. No. of the Subsidiary
meeting the requirement of QSCRM as per
clause no. 4.23.1 of the Sub-section-IA, Part-
A of Section-VI
- 3 Name, address & Telephone No. of subsidiary
company owning the technology for SCR
system

We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship with our above subsidiaries.

We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between M/s.....(QSCRM) with above subsidiaries.

We are submitting board resolution of holding company as QSCRM stating that in case of any likely change of management control of any of holding company's subsidiaries lending strength / experience to the Holding Company for meeting the requirements of clause 4.23.1 of the Sub-section-IA, Part-A of Section-VI.

We are attaching required DJU as per note A) (4) (iii) to clause no. 4.23 of the Sub-section-IA, Part-A of Section-VI.

Note for clause no. 5.0.0, 6.0.0 & 7.0.0:

1. Wherever the term 'Coal Fired' is appearing above, "Coal" shall be deemed to also include bituminous Coal/Brown Coal/lignite.
2. The bidder/its sub-vendor(s) are required to meet the provenness criteria and/or qualification requirement for the items/ services listed below as per the stipulated criteria indicated in the respective clauses. For the purpose of qualification of Bidders / Sub-vendor(s), experience shall be reckoned as on the date of consideration for approval but not later than six months after award date of EPC package unless otherwise specified in the respective clauses.
3. The technology transfer agreement shall necessarily cover transfer of technological know-how for SCR System in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company.

Signature of authorized signatory.....

FORM No. SCR-A1

**FORM OF DEED OF JOINT UNDERTAKING TO BE PROVIDED
ALONGWITH *STEAM GENERATOR MANUFACTURER/ *INDIAN JV COMPANY OF
STEAM GENERATOR MANUFACTURER/ *SUBSIDIARY COMPANY OF STEAM
GENERATOR MANUFACTURER AS PER CLAUSE *4.23.2a(i)/ *4.23.2a(ii)/ *4.23.2a(iii)
OF SUB-SECTION-IA, PART A, SECTION VI AND COLLABORATOR AS PER CLAUSE
4.23.2b) OF SUB-SECTION-IA, PART A, SECTION VI**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY CONTRACTOR *AND *HIS SUB-VENDOR MEETING THE REQUIREMENTS SPECIFIED AT CLAUSE NO. *4.23.2a(i)/ *4.23.2a(ii)/ *4.23.2a(iii) OF SUB-SECTION-IA, PART A, SECTION VI ALONGWITH THE COLLABORATOR(SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM MANUFACTURER/ SUPPLIER (QSCRM) MEETING THE REQUIREMENTS AS PER CLAUSE 4.23.1 OF SUB-SECTION-IA, PART A, SECTION VI ON HIS OWN) FOR SUCCESSFUL PERFORMANCE OF SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM, IN WHICH THE COLLABORATOR AND THE CONTRACTOR *AND *HIS SUB-VENDOR ARE JOINTLY AND SEVERALLY LIABLE TO THE EMPLOYER TO PERFORM ALL THE CONTRACTUAL OBLIGATIONS INCLUDING THE TECHNICAL GUARANTEES FOR COMPLETE SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM.

The DEED OF JOINT UNDERTAKING executed on thisday ofTwo thousandby M/sa Company incorporated underhaving its Registered Office at(hereinafter called the "Contractor", which expression shall include its successors, administrators, executors and permitted assigns)

AND

*M/sa Company incorporated underhaving its Registered Office at(hereinafter called the "SUB-VENDOR", which expression shall include its successors, administrators, executors and permitted assigns) who meets the required experience as per Clause 4.23.2 a)(i) or 4.23.2 a)(ii) or 4.23.2 a)(iii) of Sub-Section-IA, Part A, Section VI of bidding documents.

AND

M/sa Company registered under thehaving its Registered Office at(hereinafter called the "Collaborator", which expression shall include its successors, administrators, executors and permitted assigns), who meets the required experience as per Clause 4.23.1 of Sub-Section-IA, Part A, Section VI of bidding documents.

in favour of Patratu Vidyut Utpadan Nigam Ltd., a Subsidiary of NTPC Ltd in Joint Venture with Jharkhand Bijli Vitran Nigam Ltd, having its Registered Office at NTPC Bhawan, Core-7, Scope Complex, 7, Institutional Area, Lodi Road, New Delhi-110003 INDIA (hereinafter called "PVUNL" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of

Signature of authorized signatory.....

guarantee tests for the **EPC Package for Patratu STPS Expansion Phase-I (3x800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **CS-9585-001-2**.

AND WHEREAS vide clause 4.23.2 c) of Sub-Section-IA, Part A, Section VI of bidding documents, it has been specified that bidder/his sub-vendor who meets the required experience as per clause 4.23.2 a)(i) or 4.23.2 a)(ii) or 4.23.2 a)(iii) of Sub-Section-IA, Part A, Section VI shall Collaborate and have Technology Transfer agreement with a Selective Catalytic Reduction (SCR) System Manufacturer/ Supplier who meets the requirements of Clause 4.23.1 of Sub-Section-IA, Part A, Section VI on his own. In such case Contractor/ *his sub-vendor shall furnish a Deed of Joint Undertaking as per the requirement of clause no. 4.23.2(c) of Sub-Section-IA, Part A, Section VI.

WHEREAS M/s (Contractor) has submitted its proposal in response to the aforesaid Invitation for Bid by the Employer bearing No. dated for the **EPC Package for Patratu STPS Expansion Phase-I (3x800MW)** against the Employer's Bidding Documents.

AND WHEREAS M/s (*Contractor/*his sub-vendor) is a *Steam Generator Manufacturer/ *Indian Joint Venture (JV) Company/ * Subsidiary Company of a Steam Generator Company and meets the requirement specified at clause no. *4.23.2a)(i) *or *4.23.2a)(ii) *or *4.23.2a)(iii) of Sub-Section-IA, Part A, Section VI and for executing the contract desire to collaborate with M/s (hereinafter referred to as Collaborator) who is a manufacturer of Selective Catalytic Reduction (SCR) System and meets the requirements as specified in clause no.4.23.1 of Sub-Section-IA, Part A, Section VI on its own, under an ongoing Collaboration and Technology Transfer Agreement, valid minimum up to the end of the defect liability period of the contract. The Contractor, his sub-vendor (if applicable) and the Collaborator are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally responsible and bound unto the Employer for successful performance of the Selective Catalytic Reduction (SCR) System and be jointly and severally liable to perform all contractual obligations for the Selective Catalytic Reduction (SCR) System for the **EPC Package for Patratu STPS Expansion Phase-I (3x800MW)** fully meeting the stipulated technical requirements, guaranteed parameters and characteristics for the Selective Catalytic Reduction (SCR) System as per the Bidding Documents in the event the bid is accepted by the Employer resulting into a Contract.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. We the Collaborator and the Contractor *and *his Sub-Vendor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the complete Selective Catalytic Reduction (SCR) System and all the contractual obligations including the technical guarantees for the complete Selective Catalytic Reduction (SCR) System.
2. In case of any breach of the Contract committed by the Contractor *and *his Sub-Vendor, we the Collaborator do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the Selective Catalytic Reduction (SCR) System and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations stipulated under the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract for the Selective Catalytic Reduction (SCR) System, we the Collaborator and Contractor *and *his Sub-Vendor jointly and severally undertake to promptly indemnify and pay such

Signature of authorized signatory.....

loss/damages caused to the Employer on its written demand without any demur, reservation, Contest or protest in any manner whatsoever. This is without prejudice to any rights of the Employer against the Contractor/*his Sub-Vendor under the Contract and/or guarantees. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor/ *his Sub-Vendor before proceeding against the Collaborator nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any rights of the Employer under this Deed of Joint Undertaking to proceed against the Contractor.

3. Without prejudice to the generality of the Undertaking in paragraph 1 above, the manner of achieving the objective set forth in paragraph 1 above shall be as follows:
- (a) We, the Collaborator/Technology Licensor shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents / drawings and manufacturing drawings for the Selective Catalytic Reduction (SCR) System; preparation of all P&IDs & process flow diagrams; Selection of auxiliaries including catalyst, Ammonia handling and storage system and interfacing/ integrating SCR system with its auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of SCR system meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract for Selective Catalytic Reduction (SCR) System.
 - (b) We, the Collaborator/Technology Licensor shall be specifically responsible for the following:
 - (i) Complete design of SCR system including selection/ design of material, catalyst; complete mass flow balance as well as design of structural/ supporting system including selection of material & accessories etc.
 - (ii) Selection of auxiliaries for SCR System including preparation of purchase specification for critical auxiliaries including catalyst, Ammonia handling & storage system and gas sampling system.
 - (iii) Design of controls, protections and interlocks for all the auxiliaries for SCR System including Catalyst for their safe and reliable operation as integral units with other equipments of the Main Plant.
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system including all civil inputs for foundation design, site construction, structural work etc. for SCR System and for their proper interfacing and integration.
 - (v) Provide manufacturing/fabrication drawings for SCR system.

Further, we, the Collaborator/ Technology Licensor shall extend our quality surveillance/ supervision/ quality control to the Contractor during manufacture, erection, commissioning and performance testing, both at Contractor's/Sub-vendor's works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Collaborator/Technology Licensor for successful commissioning and performance of Selective Catalytic Reduction (SCR) System, the Collaborator/Technology Licensor shall depute its technical experts from time to time to the Contractor's/ Sub-vendor's works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

Signature of authorized signatory.....

- (c) We, the Collaborator/Technology Licensor will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in the Selective Catalytic Reduction (SCR) System.

For the items to be manufactured by the contractor at his/or his vendor's works as per the Collaborator/Technology Licensor design & manufacturing drawings released by us, the Collaborator shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Collaborator/Technology Licensor or its Sub-vendor's works and shall meet Collaborator/Technology Licensor acceptance.

- (d) We the Collaborator shall be fully responsible for complete design, manufacture, supply, installation so as to ensure satisfactory, reliable, safe and trouble free performance of Selective Catalytic Reduction (SCR) System.

Further, the Collaborator shall depute their technical experts from time to time to the Contractor's/*his sub-vendor's /Employer's project site as required by the Employer and agreed to by Contractor *and *his Sub-Vendor/Collaborator to facilitate the successful performance of the Selective Catalytic Reduction (SCR) System as stipulated in the aforesaid Contract.

Further, the Collaborator shall ensure proper design, manufacture, installation, testing and successful performance of the Selective Catalytic Reduction (SCR) System under the said Contract in accordance with stipulations of Bidding Documents and if necessary, the Collaborator shall advise the Contractor/ *his Sub-Vendor suitable modifications of design and implement necessary corrective measures to discharge the obligations under the contract.

- (e) In the event the Collaborator and the Contractor *and *his Sub-Vendor fail to demonstrate that the Selective Catalytic Reduction (SCR) System meets the guaranteed parameters and demonstration parameters as specified in the contract, the Collaborator and the Contractor and *and *his Sub-Vendor shall promptly carry out all the corrective measures related to engineering services at their own expense and shall promptly provide corrected design to the Employer.
- (f) Implementation of the corrected design and all other necessary repairs, replacements, rectification or modifications to the Selective Catalytic Reduction (SCR) System and payment of financial liabilities and penalties and fulfillment of all other contractual obligations as provided under the contract shall be the joint and severally responsibility of the Contractor *and *his Sub-Vendor and Collaborator.

4. We, the Contractor *and *his Sub-Vendor and the Collaborator do hereby undertake and confirm that this Undertaking shall be irrevocable and shall not be revoked till ninety (90) days after the end of the defect liability period of the last equipment covered under the Contract and further stipulate that the Undertaking herein contained shall terminate after ninety (90) days of satisfactory completion of such defect liability period. In case of delay in completion of defect liability period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. We further agree that this Undertaking shall be without any prejudice to the various liabilities of the

Signature of authorized signatory.....

Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract.

5. The Contractor *and *his Sub-Vendor and Collaborator will be fully responsible for the quality of all the equipment/main assemblies/components manufactured at their works or at their Vendors' works or constructed at site, and their repair or replacement, if necessary, for incorporation in the Plant and timely delivery thereof to meet the completion schedule under the Contract.
6. In case of Award, in addition to the Contract Performance Security furnished by the Contractor, the Collaborator *and *Contractor's Sub-Vendor shall each furnish 'as security' an on demand Performance Bank Guarantee in favour of the Employer as per provisions of the bidding documents. The value of such Bank Guarantee shall be equal to **INR 24 Million (Indian Rupees TwentyFour Million)** and it shall be guarantee towards the faithful performance /compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and valid till ninety (90) days beyond the end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by the period of such delay. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
7. Any dispute that may arise in connection with this Deed of Joint Undertaking shall be settled as per arbitration procedure/rules mentioned in the Contract Documents. This Deed of Joint Undertaking shall be construed and interpreted in accordance with the Laws of India and the Courts of Delhi shall have exclusive jurisdiction.
8. We, the Collaborator and the Contractor *and *his Sub-Vendor agree that this Undertaking shall form an integral part of the Contracts from the date of signing of this Deed of Joint Undertaking. We further agree that this Undertaking shall continue to be enforceable till its validity.
9. That this Deed of Joint Undertaking shall be operative from the effective date of signing of this Deed of Joint Undertaking.

IN WITNESS WHEREOF, the Collaborator and the Contractor *and *his Sub-Vendor through their authorised representatives, have executed these presents and affixed common seal of their respective companies, on the day, month and year first mentioned above.

1. WITNESS

For M/s

(Contractor)

.....

(Signature Name)

.....

(Signature of the Authorised Representative)

Signature of authorized signatory.....

.....
(Official Address)

Name
Designation

Common Seal of the Company

1. WITNESS

For M/s
(Collaborator)

.....
(Signature Name)
.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name
Designation

Common Seal of the Company

1. WITNESS

For M/s
(*Contractor's Sub-vendor)

.....
(Signature Name)
.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name
Designation

Signature of authorized signatory.....

Common Seal of the Company

Note : Power of Attorney of the persons signing the said Deed of Joint Undertaking is to be furnished.

* Strike out, whichever is not applicable.

Signature of authorized signatory.....

FORM No. SCR-A2

**FORM OF DEED OF JOINT UNDERTAKING TO BE PROVIDED
ALONGWITH ENGINEERING, PROCUREMENT AND CONSTRUCTION (EPC)
ORGANIZATION AS PER CLAUSE 4.23.3 a) OF SUB-SECTION-IA, PART A, SECTION VI
AND COLLABORATOR AS PER CLAUSE 4.23.3b) OF SUB-SECTION-IA, PART A,
SECTION VI**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY CONTRACTOR *AND *HIS SUB-VENDOR MEETING THE REQUIREMENTS SPECIFIED AT CLAUSE NO. 4.23.3a) OF SUB-SECTION-IA, PART A, SECTION VI ALONGWITH THE COLLABORATOR (SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM MANUFACTURER/ SUPPLIER (QSCRM) MEETING THE REQUIREMENTS AS PER CLAUSE 4.23.1 OF SUB-SECTION-IA, PART A, SECTION VI ON HIS OWN) FOR SUCCESSFUL PERFORMANCE OF SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM, IN WHICH THE COLLABORATOR AND THE CONTRACTOR *AND *HIS SUB-VENDOR ARE JOINTLY AND SEVERALLY LIABLE TO THE EMPLOYER TO PERFORM ALL THE CONTRACTUAL OBLIGATIONS INCLUDING THE TECHNICAL GUARANTEES FOR COMPLETE SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM.

The DEED OF JOINT UNDERTAKING executed on thisday ofTwo thousandby M/sa Company incorporated underhaving its Registered Office at(hereinafter called the "Contractor", which expression shall include its successors, administrators, executors and permitted assigns)

AND

*M/san Engineering, Procurement and Construction (EPC) organization Company incorporated underhaving its Registered Office at(hereinafter called the "SUB-VENDOR", which expression shall include its successors, administrators, executors and permitted assigns) who meets the required experience as per Clause 4.23.3 a) of Sub-Section-IA, Part A, Section VI of bidding documents.

AND

M/sa Company registered under thehaving its Registered Office at(hereinafter called the "Collaborator", which expression shall include its successors, administrators, executors and permitted assigns), who meets the required experience as per Clause 4.23.1 of Sub-Section-IA, Part A, Section VI of bidding documents.

in favour of Patratu Vidyut Utpadan Nigam Ltd., a Subsidiary of NTPC Ltd in Joint Venture with Jharkhand Bijli Vitran Nigam Ltd, having its Registered Office at NTPC Bhawan, Core-7, Scope Complex, 7, Institutional Area, Lodi Road, New Delhi-110003 INDIA (hereinafter called "PVUNL" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of

Signature of authorized signatory.....

guarantee tests for the **EPC Package for Patratu STPS Expansion Phase-I (3x800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **CS-9585-001-2**.

AND WHEREAS vide clause 4.23.3 c) of Sub-Section-IA, Part A, Section VI of bidding documents, it has been specified that bidder/his sub-vendor who meets the required experience as per clause 4.23.3a) of Sub-Section-IA, Part A, Section VI shall Collaborate and have Technology Transfer agreement with a Selective Catalytic Reduction (SCR) System Manufacturer/ Supplier who meets the requirements of Clause 4.23.1 of Sub-Section-IA, Part A, Section VI on his own. In such case Contractor/ *his sub-vendor shall either source the Selective Catalytic Reduction (SCR) System from such Collaborator or Manufacture/ get manufacture the Selective Catalytic Reduction (SCR) System as per the design & manufacturing drawings released by such Collaborator under an ongoing Collaboration and Technology Transfer Agreement and furnish a Deed of Joint Undertaking as per the requirement of clause no. 4.23.3(c) of Sub-Section-IA, Part A, Section VI.

WHEREAS M/s (Contractor) has submitted its proposal in response to the aforesaid Invitation for Bid by the Employer bearing No. dated for the **EPC Package for Patratu STPS Expansion Phase-I (3x800MW)** against the Employer's Bidding Documents.

AND WHEREAS M/s (*Contractor/*his sub-vendor) is an Engineering, Procurement and Construction (EPC) company and meets the requirement specified at clause no. 4.23.3a) of Sub-Section-IA, Part A, Section VI and for executing the contract desire to collaborate with M/s (hereinafter referred to as Collaborator) who is a manufacturer of Selective Catalytic Reduction (SCR) System and meets the requirements as specified in clause no.4.23.1 of Sub-Section-IA, Part A, Section VI on its own, for *sourcing the Selective Catalytic Reduction (SCR) System from the above Collaborator or *Manufacturing the Selective Catalytic Reduction (SCR) System as per the design and manufacturing drawings released by above Collaborator under an ongoing Collaboration and Technology Transfer Agreement, valid minimum up to the end of the defect liability period of the contract. The Contractor, his sub-vendor (if applicable) and the Collaborator are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally responsible and bound upto the Employer for successful performance of the Selective Catalytic Reduction (SCR) System and be jointly and severally liable to perform all contractual obligations for the Selective Catalytic Reduction (SCR) System for the **EPC Package for Patratu STPS Expansion Phase-I (3x800MW)** fully meeting the stipulated technical requirements, guaranteed parameters and characteristics for the Selective Catalytic Reduction (SCR) System as per the Bidding Documents in the event the bid is accepted by the Employer resulting into a Contract.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. We the Collaborator and the Contractor *and *his Sub-Vendor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the complete Selective Catalytic Reduction (SCR) System and all the contractual obligations including the technical guarantees for the complete Selective Catalytic Reduction (SCR) System.
2. In case of any breach of the Contract committed by the Contractor *and *his Sub-Vendor, we the Collaborator do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the Selective Catalytic Reduction (SCR) System and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the

Signature of authorized signatory.....

Contractor's obligations stipulated under the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract for the Selective Catalytic Reduction (SCR) System, we the Collaborator and Contractor *and *his Sub-Vendor jointly and severally undertake to promptly indemnify and pay such loss/damages caused to the Employer on its written demand without any demur, reservation, Contest or protest in any manner whatsoever. This is without prejudice to any rights of the Employer against the Contractor/*his Sub-Vendor under the Contract and/or guarantees. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor/ *his Sub-Vendor before proceeding against the Collaborator nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any rights of the Employer under this Deed of Joint Undertaking to proceed against the Contractor.

3. Without prejudice to the generality of the Undertaking in paragraph 1 above, the manner of achieving the objective set forth in paragraph 1 above shall be as follows:

- (a) We, the Collaborator/Technology Licensor shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents / drawings and manufacturing drawings for the Selective Catalytic Reduction (SCR) System; preparation of all P&IDs & process flow diagrams; Selection of auxiliaries including catalyst, Ammonia handling and storage system and interfacing/ integrating SCR system with its auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of SCR system meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract for Selective Catalytic Reduction (SCR) System.
- (b) We, the Collaborator/Technology Licensor shall be specifically responsible for the following:
 - (i) Complete design of SCR system including selection/ design of material, catalyst; complete mass flow balance as well as design of structural/ supporting system including selection of material & accessories etc.
 - (ii) Selection of auxiliaries for SCR System including preparation of purchase specification for critical auxiliaries including catalyst, Ammonia handling & storage system and gas sampling system.
 - (iii) Design of controls, protections and interlocks for all the auxiliaries for SCR System including Catalyst for their safe and reliable operation as integral units with other equipments of the Main Plant.
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system including all civil inputs for foundation design, site construction, structural work etc. for SCR System and for their proper interfacing and integration.
 - (v) Provide manufacturing/fabrication drawings for SCR system.

Further, we, the Collaborator/ Technology Licensor shall extend our quality surveillance/ supervision/ quality control to the Contractor during manufacture, erection, commissioning and performance testing, both at Contractor's/Sub-vendor's works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Collaborator/Technology Licensor for successful commissioning and performance of Selective Catalytic Reduction (SCR) System, the Collaborator/Technology Licensor shall depute its technical experts from time

Signature of authorized signatory.....

to time to the Contractor's/ Sub-vendor's works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- (c) We, the Collaborator/Technology Licensor will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in the Selective Catalytic Reduction (SCR) System.

For the items to be manufactured by the contractor at his/or his vendor's works as per the Collaborator/Technology Licensor design & manufacturing drawings released by us, the Collaborator shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Collaborator/Technology Licensor or its Sub-vendor's works and shall meet Collaborator/Technology Licensor acceptance.

- (d) We the Collaborator shall be fully responsible for complete design, manufacture, supply, installation so as to ensure satisfactory, reliable, safe and trouble free performance of Selective Catalytic Reduction (SCR) System.

Further, the Collaborator shall depute their technical experts from time to time to the Contractor's/*his sub-vendor's /Employer's project site as required by the Employer and agreed to by Contractor *and *his Sub-Vendor/Collaborator to facilitate the successful performance of the Selective Catalytic Reduction (SCR) System as stipulated in the aforesaid Contract.

Further, the Collaborator shall ensure proper design, manufacture, installation, testing and successful performance of the Selective Catalytic Reduction (SCR) System under the said Contract in accordance with stipulations of Bidding Documents and if necessary, the Collaborator shall advise the Contractor/ *his Sub-Vendor suitable modifications of design and implement necessary corrective measures to discharge the obligations under the contract.

- (e) In the event the Collaborator and the Contractor *and *his Sub-Vendor fail to demonstrate that the Selective Catalytic Reduction (SCR) System meets the guaranteed parameters and demonstration parameters as specified in the contract, the Collaborator and the Contractor and *and *his Sub-Vendor shall promptly carry out all the corrective measures related to engineering services at their own expense and shall promptly provide corrected design to the Employer.
- (f) Implementation of the corrected design and all other necessary repairs, replacements, rectification or modifications to the Selective Catalytic Reduction (SCR) System and payment of financial liabilities and penalties and fulfillment of all other contractual obligations as provided under the contract shall be the joint and severally responsibility of the Contractor *and *his Sub-Vendor and Collaborator.

4. We, the Contractor *and *his Sub-Vendor and the Collaborator do hereby undertake and confirm that this Undertaking shall be irrevocable and shall not be revoked till ninety (90) days after the end of the defect liability period of the last equipment covered under the Contract and further stipulate that the

Signature of authorized signatory.....

Undertaking herein contained shall terminate after ninety (90) days of satisfactory completion of such defect liability period. In case of delay in completion of defect liability period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. We further agree that this Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract.

5. The Contractor *and *his Sub-Vendor and Collaborator will be fully responsible for the quality of all the equipment/main assemblies/components manufactured at their works or at their Vendors' works or constructed at site, and their repair or replacement, if necessary, for incorporation in the Plant and timely delivery thereof to meet the completion schedule under the Contract.
6. In case of Award, in addition to the Contract Performance Security furnished by the Contractor, the Collaborator *and *Contractor's Sub-Vendor shall each furnish 'as security' an on demand Performance Bank Guarantee in favour of the Employer as per provisions of the bidding documents. The value of such Bank Guarantee shall be equal to **INR 24 Million (Indian Rupees Twenty Four Million)** and it shall be guarantee towards the faithful performance /compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and valid till ninety (90) days beyond the end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by the period of such delay. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
7. Any dispute that may arise in connection with this Deed of Joint Undertaking shall be settled as per arbitration procedure/rules mentioned in the Contract Documents. This Deed of Joint Undertaking shall be construed and interpreted in accordance with the Laws of India and the Courts of Delhi shall have exclusive jurisdiction.
8. We, the Collaborator and the Contractor *and *his Sub-Vendor agree that this Undertaking shall form an integral part of the Contracts from the date of signing of this Deed of Joint Undertaking. We further agree that this Undertaking shall continue to be enforceable till its validity.
9. That this Deed of Joint Undertaking shall be operative from the effective date of signing of this Deed of Joint Undertaking.

IN WITNESS WHEREOF, the Collaborator and the Contractor *and *his Sub-Vendor through their authorised representatives, have executed these presents and affixed common seal of their respective companies, on the day, month and year first mentioned above.

1. WITNESS

For M/s

(Contractor)

Signature of authorized signatory.....

.....

(Signature Name)

.....

(Official Address)

.....

(Signature of the Authorised Representative)

Name

Designation

Common Seal of the Company

1. WITNESS

For M/s

(Collaborator)

.....

(Signature Name)

.....

(Official Address)

.....

(Signature of the Authorised Representative)

Name

Designation

Common Seal of the Company

1. WITNESS

For M/s

(*Contractor's Sub-vendor)

.....

(Signature Name)

.....

(Signature of the Authorised Representative)

Signature of authorized signatory.....

.....
(Official Address)

Name

Designation

Common Seal of the Company

Note : Power of Attorney of the persons signing the said Deed of Joint Undertaking is to be furnished.

* Strike out, whichever is not applicable.

Signature of authorized signatory.....

FORM No. SCR-A3

**FORM OF DEED OF JOINT UNDERTAKING TO BE PROVIDED
ALONGWITH HOLDING COMPANY AS PER NOTES a) (4) (II) TO CLAUSE 4.23.1, 4.23.2
AND 4.23.3 OF SUB-SECTION-IA, PART A, SECTION VI**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

**DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR,
THE QUALIFIED SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM
MANUFACTURER/ SUPPLIER (QSCRM) (HOLDING COMPANY WHO ALONGWITH ITS
SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 4.23.1 OF SUB-SECTION-IA,
PART-A, SECTION-VI.**

The DEED OF JOINT UNDERTAKING executed on thisday ofTwo
thousandby M/sa Company incorporated under
.....having its Registered Office at(hereinafter called the
"Contractor", which expression shall include its successors, administrators, executors and
permitted assigns)

AND

*M/sa Company incorporated underhaving its
Registered Office at(hereinafter called the "SUB-VENDOR", which
expression shall include its successors, administrators, executors and permitted assigns) who
meets the required experience as per Clause 4.23.2 of Sub-Section-IA, Part A, Section VI of
bidding documents.

AND

M/sa Company registered under thehaving its Registered
Office at(hereinafter called the "COLLABORATOR/ HOLDING COMPANY",
which expression shall include its successors, administrators, executors and permitted
assigns), who meets the required experience as per Clause 4.23.1 of Sub-Section-IA, Part A,
Section VI of bidding documents.

in favour of Patratu Vidyut Utpadan Nigam Ltd., a Subsidiary of NTPC Ltd in Joint Venture
with Jharkhand Bijli Vitran Nigam Ltd, having its Registered Office at NTPC Bhawan, Core-7,
Scope Complex, 7, Institutional Area, Lodi Road, New Delhi-110003 INDIA (hereinafter called
"PVUNL" or "Employer" which expression shall include its successors, administrators,
executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply,
transportation to site, construction, installation, testing, commissioning and conductance of
guarantee tests for the **EPC Package for Patratu STPS Expansion Phase-I (3x800MW)**
(hereinafter referred to as "Plant") vide its Bidding Document No. **CS-9585-001-2**.

AND WHEREAS vide A) Note to clause 4.23.1, 4.23.2 & 4.23.3, (4) of Sub-Section-IA, Part A,
Section VI of bidding documents, it has been specified that bidder/ his sub-vendor who meets
the required experience as per clause 4.23.2 of Sub-Section-IA, Part A, Section VI shall
Associate/ Collaborate with a Holding Company who meets the requirements of Clause 4.23.1
of Sub-Section-IA, Part A, Section VI alongwith its Subsidiary company(ies). In such case

Signature of authorized signatory.....

Contractor/ *his sub-vendor shall furnish a Deed of Joint Undertaking as per the requirement of A) Note to clause 4.23.1, 4.23.2 & 4.23.3, (4) (ii) of Sub-Section-IA, Part A, Section VI of bidding documents.

WHEREAS M/s (Contractor) has submitted its proposal in response to the aforesaid Invitation for Bid by the Employer bearing No. dated for the **EPC Package for Patratu STPS Expansion Phase-I (3x800MW)** against the Employer's Bidding Documents.

AND WHEREAS M/s (*Contractor/*his sub-vendor) meets the requirement specified at clause no. 4.23.2 of Sub-Section-IA, Part A, Section VI and for executing the contract desire to associate/ collaborate with M/s (hereinafter referred to as Collaborator) who is a Holding Company and meets the requirements as specified in clause no.4.23.1 of Sub-Section-IA, Part A, Section VI alongwith its Subsidiary company(ies). The Contractor, his sub-vendor (if applicable) and the Collaborator are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally responsible and bound unto the Employer for successful performance of the Selective Catalytic Reduction (SCR) System and be jointly and severally liable to perform all contractual obligations for the Selective Catalytic Reduction (SCR) System for the **EPC Package for Patratu STPS Expansion Phase-I (3x800MW)** fully meeting the stipulated technical requirements, guaranteed parameters and characteristics for the Selective Catalytic Reduction (SCR) System as per the Bidding Documents in the event the bid is accepted by the Employer resulting into a Contract.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. We the Collaborator and the Contractor *and *his Sub-Vendor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the complete Selective Catalytic Reduction (SCR) System and all the contractual obligations including the technical guarantees for the complete Selective Catalytic Reduction (SCR) System.
2. In case of any breach of the Contract committed by the Contractor *and *his Sub-Vendor, we the Collaborator do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the Selective Catalytic Reduction (SCR) System and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations stipulated under the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract for the Selective Catalytic Reduction (SCR) System, we the Collaborator and Contractor *and *his Sub-Vendor jointly and severally undertake to promptly indemnify and pay such loss/damages caused to the Employer on its written demand without any demur, reservation, Contest or protest in any manner whatsoever. This is without prejudice to any rights of the Employer against the Contractor/*his Sub-Vendor under the Contract and/or guarantees. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor/ *his Sub-Vendor before proceeding against the Collaborator nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any rights of the Employer under this Deed of Joint Undertaking to proceed against the Contractor.
3. Without prejudice to the generality of the Undertaking in paragraph 1 above, the manner of achieving the objective set forth in paragraph 1 above shall be as follows:

Signature of authorized signatory.....

- (a) We, the Collaborator/Technology Licensor shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents / drawings and manufacturing drawings for the Selective Catalytic Reduction (SCR) System; preparation of all P&IDs & process flow diagrams; Selection of auxiliaries including catalyst, Ammonia handling and storage system and interfacing/ integrating SCR system with its auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of SCR system meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract for Selective Catalytic Reduction (SCR) System.
- (b) We, the Collaborator/Technology Licensor shall be specifically responsible for the following:
 - (i) Complete design of SCR system including selection/ design of material, catalyst; complete mass flow balance as well as design of structural/ supporting system including selection of material & accessories etc.
 - (ii) Selection of auxiliaries for SCR System including preparation of purchase specification for critical auxiliaries including catalyst, Ammonia handling & storage system and gas sampling system.
 - (iii) Design of controls, protections and interlocks for all the auxiliaries for SCR System including Catalyst for their safe and reliable operation as integral units with other equipments of the Main Plant.
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system including all civil inputs for foundation design, site construction, structural work etc. for SCR System and for their proper interfacing and integration.
 - (v) Provide manufacturing/fabrication drawings for SCR system.

Further, we, the Collaborator/ Technology Licensor shall extend our quality surveillance/ supervision/ quality control to the Contractor during manufacture, erection, commissioning and performance testing, both at Contractor's/Sub-vendor's works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Collaborator/Technology Licensor for successful commissioning and performance of Selective Catalytic Reduction (SCR) System, the Collaborator/Technology Licensor shall depute its technical experts from time to time to the Contractor's/ Sub-vendor's works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- (c) We, the Collaborator/Technology Licensor will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in the Selective Catalytic Reduction (SCR) System.

For the items to be manufactured by the contractor at his/or his vendor's works as per the Collaborator/Technology Licensor design & manufacturing drawings released by us, the Collaborator shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Collaborator/Technology Licensor or its Sub-vendor's works and shall meet Collaborator/Technology Licensor acceptance.

Signature of authorized signatory.....

- (d) We the Collaborator shall be fully responsible for complete design, manufacture, supply, installation so as to ensure satisfactory, reliable, safe and trouble free performance of Selective Catalytic Reduction (SCR) System.

Further, the Collaborator shall depute their technical experts from time to time to the Contractor's/*his sub-vendor's /Employer's project site as required by the Employer and agreed to by Contractor *and *his Sub-Vendor/Collaborator to facilitate the successful performance of the Selective Catalytic Reduction (SCR) System as stipulated in the aforesaid Contract.

Further, the Collaborator shall ensure proper design, manufacture, installation, testing and successful performance of the Selective Catalytic Reduction (SCR) System under the said Contract in accordance with stipulations of Bidding Documents and if necessary, the Collaborator shall advise the Contractor/ *his Sub-Vendor suitable modifications of design and implement necessary corrective measures to discharge the obligations under the contract.

- (e) In the event the Collaborator and the Contractor *and *his Sub-Vendor fail to demonstrate that the Selective Catalytic Reduction (SCR) System meets the guaranteed parameters and demonstration parameters as specified in the contract, the Collaborator and the Contractor and *and *his Sub-Vendor shall promptly carry out all the corrective measures related to engineering services at their own expense and shall promptly provide corrected design to the Employer.
- (f) Implementation of the corrected design and all other necessary repairs, replacements, rectification or modifications to the Selective Catalytic Reduction (SCR) System and payment of financial liabilities and penalties and fulfillment of all other contractual obligations as provided under the contract shall be the joint and severally responsibility of the Contractor *and *his Sub-Vendor and Collaborator.
4. We, the Contractor *and *his Sub-Vendor and the Collaborator do hereby undertake and confirm that this Undertaking shall be irrevocable and shall not be revoked till ninety (90) days after the end of the defect liability period of the last equipment covered under the Contract and further stipulate that the Undertaking herein contained shall terminate after ninety (90) days of satisfactory completion of such defect liability period. In case of delay in completion of defect liability period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. We further agree that this Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract.
5. The Contractor *and *his Sub-Vendor and Collaborator will be fully responsible for the quality of all the equipment/main assemblies/components manufactured at their works or at their Vendors' works or constructed at site, and their repair or replacement, if necessary, for incorporation in the Plant and timely delivery thereof to meet the completion schedule under the Contract.
6. In case of Award, in addition to the Contract Performance Security furnished by the Contractor, the Collaborator *and *Contractor's Sub-Vendor shall each furnish 'as security' an on demand Performance Bank Guarantee in favour of

Signature of authorized signatory.....

the Employer as per provisions of the bidding documents. The value of such Bank Guarantee shall be equal to **INR 24 Million (Indian Rupees Twenty Four Million)** and it shall be guarantee towards the faithful performance /compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and valid till ninety (90) days beyond the end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by the period of such delay. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

7. Any dispute that may arise in connection with this Deed of Joint Undertaking shall be settled as per arbitration procedure/rules mentioned in the Contract Documents. This Deed of Joint Undertaking shall be construed and interpreted in accordance with the Laws of India and the Courts of Delhi shall have exclusive jurisdiction.
8. We, the Collaborator and the Contractor *and *his Sub-Vendor agree that this Undertaking shall form an integral part of the Contracts from the date of signing of this Deed of Joint Undertaking. We further agree that this Undertaking shall continue to be enforceable till its validity.
9. That this Deed of Joint Undertaking shall be operative from the effective date of signing of this Deed of Joint Undertaking.

IN WITNESS WHEREOF, the Collaborator and the Contractor *and *his Sub-Vendor through their authorised representatives, have executed these presents and affixed common seal of their respective companies, on the day, month and year first mentioned above.

1. WITNESS

For M/s

(Contractor)

.....

(Signature Name)

.....

(Signature of the Authorised Representative)

.....

Name

(Official Address)

Designation

Common Seal of the Company

Signature of authorized signatory.....

1. WITNESS For M/s
(Collaborator/ Holding Company)
.....
(Signature Name)
(Signature of the Authorised Representative)
.....
(Official Address) Name
Designation

Common Seal of the Company

1. WITNESS For M/s
(*Contractor's Sub-vendor)
.....
(Signature Name)
(Signature of the Authorised Representative)
.....
(Official Address) Name
Designation

Common Seal of the Company

Note :

1. However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 4.23.1 of Sub-Section-IA, Part-A, Section-VI, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding

Signature of authorized signatory.....

Company for fulfillment of requirement of clause 4.23.1 of Sub-Section-IA, Part-A, Section-VI, before the change in management control actually occurs.

2. Power of Attorney of the persons signing the said Deed of Joint Undertaking is to be furnished.
3. * Strike out, whichever is not applicable.

Signature of authorized signatory.....

FORM No. SCR-A4

**FORM OF DEED OF JOINT UNDERTAKING TO BE PROVIDED
ALONGWITH HOLDING COMPANY AS PER NOTES a) (4) (II) TO CLAUSE 4.23.1, 4.23.2
AND 4.23.3 OF SUB-SECTION-IA, PART A, SECTION VI**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

**DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR,
THE QUALIFIED SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM
MANUFACTURER/ SUPPLIER (QSCRM) (HOLDING COMPANY WHO ALONGWITH ITS
SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 4.23.1 OF SUB-SECTION-IA,
PART-A, SECTION-VI.**

The DEED OF JOINT UNDERTAKING executed on thisday ofTwo
thousandby M/sa Company incorporated under
.....having its Registered Office at(hereinafter called the
"Contractor", which expression shall include its successors, administrators, executors and
permitted assigns)

AND

*M/sa Company incorporated underhaving its
Registered Office at(hereinafter called the "SUB-VENDOR", which
expression shall include its successors, administrators, executors and permitted assigns) who
meets the required experience as per Clause 4.23.3 of Sub-Section-IA, Part A, Section VI of
bidding documents.

AND

M/sa Company registered under thehaving its Registered
Office at(hereinafter called the "COLLABORATOR/ HOLDING COMPANY",
which expression shall include its successors, administrators, executors and permitted
assigns), who meets the required experience as per Clause 4.23.1 of Sub-Section-IA, Part A,
Section VI of bidding documents.

in favour of Patratu Vidyut Utpadan Nigam Ltd., a Subsidiary of NTPC Ltd in Joint Venture
with Jharkhand Bijli Vitran Nigam Ltd, having its Registered Office at NTPC Bhawan, Core-7,
Scope Complex, 7, Institutional Area, Lodi Road, New Delhi-110003 INDIA (hereinafter called
"PVUNL" or "Employer" which expression shall include its successors, administrators,
executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply,
transportation to site, construction, installation, testing, commissioning and conductance of
guarantee tests for the **EPC Package for Patratu STPS Expansion Phase-I (3x800MW)**
(hereinafter referred to as "Plant") vide its Bidding Document No. **CS-9585-001-2**.

AND WHEREAS vide A) Note to clause 4.23.1, 4.23.2 & 4.23.3, (4) of Sub-Section-IA, Part A,
Section VI of bidding documents, it has been specified that bidder/ his sub-vendor who meets
the required experience as per clause 4.23.3 of Sub-Section-IA, Part A, Section VI shall
Associate/ Collaborate with a Holding Company who meets the requirements of Clause 4.23.1
of Sub-Section-IA, Part A, Section VI alongwith its Subsidiary company(ies). In such case

Signature of authorized signatory.....

Contractor/ *his sub-vendor shall either source the Selective Catalytic Reduction (SCR) System from such Collaborator or Manufacture/ get manufacture the Selective Catalytic Reduction (SCR) System as per the design & manufacturing drawings released by such Collaborator under an ongoing Collaboration and Technology Transfer Agreement and furnish a Deed of Joint Undertaking as per the requirement of A) Note to clause 4.23.1, 4.23.2 & 4.23.3, (4) (ii) of Sub-Section-IA, Part A, Section VI of bidding documents.

WHEREAS M/s (Contractor) has submitted its proposal in response to the aforesaid Invitation for Bid by the Employer bearing No. dated for the **EPC Package for Patratu STPS Expansion Phase-I (3x800MW)** against the Employer's Bidding Documents.

AND WHEREAS M/s (*Contractor/*his sub-vendor) meets the requirement specified at clause no. *4.23.3 of Sub-Section-IA, Part A, Section VI and for executing the contract desire to associate/ collaborate with M/s (hereinafter referred to as Collaborator) who is a Holding Company and meets the requirements as specified in clause no.4.23.1 of Sub-Section-IA, Part A, Section VI alongwith its Subsidiary company(ies). The Contractor, his sub-vendor (if applicable) and the Collaborator are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally responsible and bound unto the Employer for successful performance of the Selective Catalytic Reduction (SCR) System and be jointly and severally liable to perform all contractual obligations for the Selective Catalytic Reduction (SCR) System for the **EPC Package for Patratu STPS Expansion Phase-I (3x800MW)** fully meeting the stipulated technical requirements, guaranteed parameters and characteristics for the Selective Catalytic Reduction (SCR) System as per the Bidding Documents in the event the bid is accepted by the Employer resulting into a Contract.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. We the Collaborator and the Contractor *and *his Sub-Vendor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the complete Selective Catalytic Reduction (SCR) System and all the contractual obligations including the technical guarantees for the complete Selective Catalytic Reduction (SCR) System.
2. In case of any breach of the Contract committed by the Contractor *and *his Sub-Vendor, we the Collaborator do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the Selective Catalytic Reduction (SCR) System and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations stipulated under the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract for the Selective Catalytic Reduction (SCR) System, we the Collaborator and Contractor *and *his Sub-Vendor jointly and severally undertake to promptly indemnify and pay such loss/damages caused to the Employer on its written demand without any demur, reservation, Contest or protest in any manner whatsoever. This is without prejudice to any rights of the Employer against the Contractor/*his Sub-Vendor under the Contract and/or guarantees. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor/ *his Sub-Vendor before proceeding against the Collaborator nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any rights of the Employer under this Deed of Joint Undertaking to proceed against the Contractor.

Signature of authorized signatory.....

3. Without prejudice to the generality of the Undertaking in paragraph 1 above, the manner of achieving the objective set forth in paragraph 1 above shall be as follows:

- (a) We, the Collaborator/Technology Licensor shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents / drawings and manufacturing drawings for the Selective Catalytic Reduction (SCR) System; preparation of all P&IDs & process flow diagrams; Selection of auxiliaries including catalyst, Ammonia handling and storage system and interfacing/ integrating SCR system with its auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of SCR system meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract for Selective Catalytic Reduction (SCR) System.
- (b) We, the Collaborator/Technology Licensor shall be specifically responsible for the following:
 - (i) Complete design of SCR system including selection/ design of material, catalyst; complete mass flow balance as well as design of structural/ supporting system including selection of material & accessories etc.
 - (ii) Selection of auxiliaries for SCR System including preparation of purchase specification for critical auxiliaries including catalyst, Ammonia handling & storage system and gas sampling system.
 - (iii) Design of controls, protections and interlocks for all the auxiliaries for SCR System including Catalyst for their safe and reliable operation as integral units with other equipments of the Main Plant.
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system including all civil inputs for foundation design, site construction, structural work etc. for SCR System and for their proper interfacing and integration.
 - (v) Provide manufacturing/fabrication drawings for SCR system.

Further, we, the Collaborator/ Technology Licensor shall extend our quality surveillance/ supervision/ quality control to the Contractor during manufacture, erection, commissioning and performance testing, both at Contractor's/Sub-vendor's works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Collaborator/Technology Licensor for successful commissioning and performance of Selective Catalytic Reduction (SCR) System, the Collaborator/Technology Licensor shall depute its technical experts from time to time to the Contractor's/ Sub-vendor's works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- (c) We, the Collaborator/Technology Licensor will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in the Selective Catalytic Reduction (SCR) System.

For the items to be manufactured by the contractor at his/or his vendor's works as per the Collaborator/Technology Licensor design & manufacturing drawings released by us, the Collaborator shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if

Signature of authorized signatory.....

manufactured at Collaborator/Technology Licensor or its Sub-vendor's works and shall meet Collaborator/Technology Licensor acceptance.

- (d) We the Collaborator shall be fully responsible for complete design, manufacture, supply, installation so as to ensure satisfactory, reliable, safe and trouble free performance of Selective Catalytic Reduction (SCR) System.

Further, the Collaborator shall depute their technical experts from time to time to the Contractor's/*his sub-vendor's /Employer's project site as required by the Employer and agreed to by Contractor *and *his Sub-Vendor/Collaborator to facilitate the successful performance of the Selective Catalytic Reduction (SCR) System as stipulated in the aforesaid Contract.

Further, the Collaborator shall ensure proper design, manufacture, installation, testing and successful performance of the Selective Catalytic Reduction (SCR) System under the said Contract in accordance with stipulations of Bidding Documents and if necessary, the Collaborator shall advise the Contractor/ *his Sub-Vendor suitable modifications of design and implement necessary corrective measures to discharge the obligations under the contract.

- (e) In the event the Collaborator and the Contractor *and *his Sub-Vendor fail to demonstrate that the Selective Catalytic Reduction (SCR) System meets the guaranteed parameters and demonstration parameters as specified in the contract, the Collaborator and the Contractor and *and *his Sub-Vendor shall promptly carry out all the corrective measures related to engineering services at their own expense and shall promptly provide corrected design to the Employer.

- (f) Implementation of the corrected design and all other necessary repairs, replacements, rectification or modifications to the Selective Catalytic Reduction (SCR) System and payment of financial liabilities and penalties and fulfillment of all other contractual obligations as provided under the contract shall be the joint and severally responsibility of the Contractor *and *his Sub-Vendor and Collaborator.

4. We, the Contractor *and *his Sub-Vendor and the Collaborator do hereby undertake and confirm that this Undertaking shall be irrevocable and shall not be revoked till ninety (90) days after the end of the defect liability period of the last equipment covered under the Contract and further stipulate that the Undertaking herein contained shall terminate after ninety (90) days of satisfactory completion of such defect liability period. In case of delay in completion of defect liability period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. We further agree that this Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract.

5. The Contractor *and *his Sub-Vendor and Collaborator will be fully responsible for the quality of all the equipment/main assemblies/components manufactured at their works or at their Vendors' works or constructed at site, and their repair or replacement, if necessary, for incorporation in the Plant and timely delivery thereof to meet the completion schedule under the Contract.

Signature of authorized signatory.....

6. In case of Award, in addition to the Contract Performance Security furnished by the Contractor, the Collaborator *and *Contractor's Sub-Vendor shall each furnish 'as security' an on demand Performance Bank Guarantee in favour of the Employer as per provisions of the bidding documents. The value of such Bank Guarantee shall be equal to **INR 24 Million (Indian Rupees Twenty Four Million)** and it shall be guarantee towards the faithful performance /compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and valid till ninety (90) days beyond the end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by the period of such delay. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
7. Any dispute that may arise in connection with this Deed of Joint Undertaking shall be settled as per arbitration procedure/rules mentioned in the Contract Documents. This Deed of Joint Undertaking shall be construed and interpreted in accordance with the Laws of India and the Courts of Delhi shall have exclusive jurisdiction.
8. We, the Collaborator and the Contractor *and *his Sub-Vendor agree that this Undertaking shall form an integral part of the Contracts from the date of signing of this Deed of Joint Undertaking. We further agree that this Undertaking shall continue to be enforceable till its validity.
9. That this Deed of Joint Undertaking shall be operative from the effective date of signing of this Deed of Joint Undertaking.

IN WITNESS WHEREOF, the Collaborator and the Contractor *and *his Sub-Vendor through their authorised representatives, have executed these presents and affixed common seal of their respective companies, on the day, month and year first mentioned above.

1. WITNESS	For M/s
	(Contractor)
.....	
(Signature Name)	
	(Signature of the Authorised Representative)
.....	
(Official Address)	Name
	Designation
	Common Seal of the Company

Signature of authorized signatory.....

1. WITNESS For M/s
 (Collaborator/ Holding Company)

 (Signature Name)
 (Signature of the Authorised Representative)

 Name
 (Official Address) Designation
 Common Seal of the Company

1. WITNESS For M/s
 (*Contractor's Sub-vendor)

 (Signature Name)
 (Signature of the Authorised Representative)

 Name
 (Official Address) Designation
 Common Seal of the Company

Note :

1. However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 4.23.1 of Sub-Section-IA, Part-A, Section-

Signature of authorized signatory.....

VI, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 4.23.1 of Sub-Section-IA, Part-A, Section-VI, before the change in management control actually occurs.

2. Power of Attorney of the persons signing the said Deed of Joint Undertaking is to be furnished.
3. * Strike out, whichever is not applicable.

Signature of authorized signatory.....