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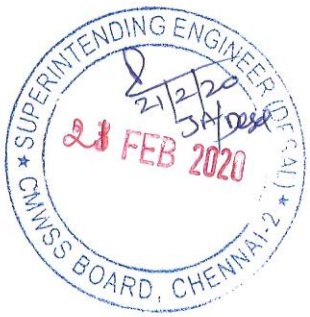

Ref: SMEC/ CMWSSB / 7061563/012

Date: 21st February 2020

To,
The Superintending Engineer (Desalination)
6th floor, Chennai Metropolitan Water Supply and Sewerage Board,
No.1, Pumping Station Road,
Chintadripet, Chennai 600 002
Tamil Nadu, India

Sub: Consultancy for "Design, Preparation of Bid Documents & Evaluation of Bids for the Proposed Construction of 400 MLD Capacity Seawater Reverse Osmosis Desalination Plant at Perur along East Coast Road, South of Chennai, Tamil Nadu and Construction Management & Supervision for the Proposed Desalination Plant and its Product Water Conveyance Pipeline from the Plant and upto Porur and all allied works"
Readjustment of Man-month allocation of Dr.Uday Kelkar (NJEI Pvt. Ltd.) – Reg.

Ref:
1. Our Letter no. Ref: SMEC/ CMWSSB / 7061563/005, dated 20.01.2020
2. Your Letter no. Lr.no.CMWSSB/SE(Desal)/400 MLD Plant / PMC/2020, dated 13.01.2020
2. Our Contract Agreement with CMWSSB, dated 09.01.2020
3. Kick-off meeting held at CMWSSB on 10.12.2019
4. Kick-off meeting held at JICA Headquarters, New Delhi on 27.11.2019
5. Our Letter no. Ref : 1600991/LOA/07, dated 08.11.2019
6. Your Letter no. Lr.no.CMWSSB /CNT/CON/DESAL/ICB/GoI/016/2018-19, dated 06.11.2019

Dear Sir,

With reference to above, during the kick-off meeting held at JICA Delhi along with CMWSSB and PMC staff vide our letter reference no. 4, dated 27.11.2019, it was proposed by JICA that Dr.Uday Kelkar, NJSEI need to get involved in this project to expedite the JICA co-ordination considering his vast experience in handling JICA projects. For your kind reference we are hereby enclosing his CV for your perusal. We are hereby proposing 2.50 months of his inputs which can be adjusted from the inputs of Dr.Ghulam Mustafa (Desalination Expert). In line the above, we are hereby submitting man-month adjustment Process The request letter from NJSEI, statement of man-month readjustment and CV of Dr.Uday Kelkar is enclosed along with this letter. We assure you that this readjustment will not have any extra financial implication to CMWSSB over and above the contract price of the Consultancy Services. We request your kind approval in this regard.

This is for your kind information and record. Thanking you assuring you of services at all times.

Yours truly,
For **Consortium of SMEC International-TCE-NJSEI-SMEC (India) Pvt. Ltd.**

P. Dharmabalan

Dr. Pararajasegram (Dharma) Dharmabalan
Team Leader / Project Manager,
SMEC International Pty. Ltd.

Encl: Letter from NJSEI Pvt. Ltd.

SMEC International Pty. Ltd.
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CIN: U74210PN2007PTC129798

Ref. NJSEI/Chennai/001/2019-20 Dated : 20.02.2020

To,

Superintending Engineer (Desalination),
6th Floor, Chennai Metropolitan Water Supply & Sewerage Board,
No.1 Pumping Station Road,
Chintdaripet, Chennai 600 002

Sub. Consultancy for Design, Preparation of Bid Documents & Evaluation of Bids for the proposed construction of 400 MLD capacity Sea Water Reverse Osmosis Desalination Plant at Perur along East Coast Road, South of Chennai, Tamil Nadu and Construction Management & Supervision for the Proposed Desalination Plant and its Product Water conveyance Pipeline from the Plant and upto Perur and all allied Works – **Readjustment of man-month allocation – Reg.**

Ref : 1 Our Contract Agreement with CMWSSB, dated 09.01.2020

Dear Sir,

This is to bring to your kind attention that PMC services for the project was commenced on Jan'2020. The PMC team comprises of SMEC International (Lead) along with Consortium partners NJSEI, TCE and SMEC India.

During the kickoff meeting at JICA Delhi Office along with CMWSSB and PMC staff it was proposed by JICA that Dr Uday Kelkar, NJSEI, need to get involved in this project to expedite the JICA coordination considering his vast experience in handling JICA projects. At the same time Dr Uday Kelkar is a renounced International water and waste water treatment (including membranes) expert having extensive working experience in USA and India and hence his inputs will be of added value in this very important project. For your kind reference we are here by enclosing his CV for your perusal. We are hereby proposing 2.5 months of his inputs which can be adjusted from the inputs of the Desalination Expert.

In line with the above we are hereby submitting our man-month readjustment proposal for Dr Uday G Kelkar's inputs. The statement of man-month readjustment is enclosed as Annexure-1.

We assure you that this readjustment will not have any extra financial implication to CMWSSB over and above the contract price of the Consultancy Services.

We request your kind approval in this regard. We would be happy to provide any further clarifications in this regard.

Thanking you for your kind consideration.

Very truly yours,

for NJS Engineers India Pvt Ltd (Member of Consortium)

Pradipto Sarkar

Pradipto Sarkar
Director
Enclosed : 1) Annexure -1 (Manmonth Readjustment sheet)
2) CV of Dr Uday G Kelkar

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Readjustment of Man Month for Key Staff - NJS Engineers India Pvt Limited (NJSEI)

Criteria No	Name of Expert	Designation	Responsibility	Organization	Man Months						Man month Rate (USD)	Amount (USD)
					Field / Home office	Contract (1)	Used upto End of Jan 2020 (2)	Balance (1) - (2)	Estimated MM required	Man month available for conversion		
1. Remuneration												
2	Ghulam Mustafa	Desalination Expert - International Expert	Design Engineer	NJSEI	Field	32	0	32	29.5	2.5	26225	65562.5
										Available cost (USD.)		65,563
Man Months Needed												
	Dr Uday G Kelkar	Snr Process Expert - International Expert	Design Engineer / JICA coordination	NJSEI	Field	-	-	-	2.50		26225	65563
										Total Cost Required (USD.)		65,563

Prodipto Sarkar

General:

Proposed Position	:	Sr. Treatment Expert
Name of Firm	:	NJS Engineers India Pvt. Ltd.
Name of Staff	:	Dr. Uday G. Kelkar
Date of Birth	:	30th December, 1962
Nationality	:	USA / Indian (OCI)
Years with Firm / Entity	:	13 years (26 years total)
Membership of Professional Associations	:	• Professional Engineer (PE), Michigan 1999 to date (LIC No. 1397332) • AAEE Certified Environmental Engineer – BCEE license (1999 to date) • Water Environment and Federation (WEF) – Bio-solids committee member • American Water Works Association (AWWA) & Water Environment Federation (WEF) • International Ozone Association (IOA) • International Ultraviolet Association (IUVA) – International Treasurer – 2000 2003 • Indian Water Works Association (IWWA) – Life Member • Indian Environment Association (IEA) – Life Member Publications: • Has authored more than 120 papers/publication/presentations combined on various subjects dealing with Advanced water and wastewater treatment processes, distribution system water quality, disinfection, sludge management, and recycle and reuse of Wastewater for indirect potable and non-potable applications
Countries of Work Experience	:	USA / Canada / Sri Lanka / UAE / Vietnam / India
Detailed Task Assigned	:	Refer Form 3E

Education:

Degree	Year of passing	University
PhD Civil / Environmental	1990	Old Dominion University, Virginia, USA – **Treatment of Water and Wastewater Sludges with Advance Oxidation – Ph.D. Thesis (recipient of Virginia Section Graduate Thesis Award)**
MSc – Civil / Environmental	1989	Old Dominion University, Virginia, USA
BE – Civil Engineering	1985	Govt. College of Engineering, Pune, University of Pune

Employment Record:

From (Year)	To (Year)	Employer	Positions Held
2004	Present	NJS Engineers India Pvt. Ltd.(2007 to present)	Managing Director & CEO
		NJS Japan – 2004 to 2017, Director of India operations (2004 to 2017 June)	Team Leader / Water & Wastewater Treatment Expert / Sludge Expert / Recycle & Reuse Expert
1995	2004	Camp Dresser & McKee International Inc. (now CDM-Smith, Inc)	Team Leader / Water & Wastewater Treatment Expert/ Process Specialist, etc.
1993	1995	Malcolm Pirnie, Inc, Newport News, Virginia (now Arcadis, Inc)	Team Leader / Water & Wastewater Treatment Expert/ Process Specialist, and project engineer etc.

Relevant Experience

Name of assignment or project: Providing Consulting Services for Design, Engineering, Tendering, Supervision and Monitoring to implement Bengaluru Water Supply & Sewerage Project (III) [Cauvery Water Supply Scheme Stage V (JICA assisted)]
Year: Jan 2019 – Till Date
Location: Bangalore, India
Client: Bangalore Water Supply & Sewerage Board (BWSSB)

Main Project Features: Project includes Wastewater collection network (mains and trunk lines – total length 213 km) in 110 villages, construction of 14 STPs of total capacity of 124 MLD and 7 no's of ISPS of total capacity of 40 MLD (design period 2034), Centralized SCADA and MIS for both water and sewerage facilities, WTP of 775 MLD at T.K. Halli, Three stages of clear water pumping stations of capacity 775 MLD (6W + 3S pumps) and three clear water reservoirs of capacities 64 MLD, 32 Ml D and 32 Ml D, with electro mechanical works at T K Halli, Harohalli and Tataguni

Position: Team Leader - Design (Overall Management) - Common for Both Water and Sewerage Component

Activities Performed:

- General coordination and overall project management
- Client liaison and interaction with all BWSSB staff on both water, wastewater issues – WTP, pumping stations, raw water mains, distribution system, GLRs, WWTPs, pumping stations, sewerage – as well as other important issues such as Recycle and reuse, rainwater harvesting, NRW, - training and workshops
- Supervise the consultant's services
- Review Bidding documents prepared by contract specialist. Interact with client to provide input in particular conditions of the contract
- Assume direct responsibility for day-to-day consulting services
- Represents the consultant's Team all in matters relating to the performance of services
- Prepare monthly and quarterly progress reports
- Interact and liaison with BWWSB,GOK as well as JICA

Name of Assignment or Project: Delhi Water Supply Improvement Investment Program (DWSIIP) at Delhi – **ADB assisted.** Wazirabad WTP command area.

Year: 2017-present

Location: Delhi

Client: Delhi Jal Board

Main Project Features: DWSIIP targets a complete improvement to water treatment, transmission and distribution network improvements to Wazirabad Water Treatment Plant Command area located in northern part of Delhi to ensure the objective of improved water supply services. The multi tranche financing facility (MFF) targets benefits to 2.64 million population in terms of 24x7 and quality supply of water. The DWSIIP will help achieve the National Capital Territory of Delhi (NCTD) Water Supply Master Plan objectives of reduced non-revenue water (NRW) and equitable access to water supply services, as well as 24x7 supply. The investment program includes rehabilitation, upgrading and/or replacement of key water supply infrastructure, improvements in the management of the infrastructure and improved customer related services within the Wazirabad WTP command area. The estimated cost of the project is US$ 415 million, with ADB financing US$ 290 million. Physical works to be implemented in 6 packages include **upgrading and rehabilitation of water treatment plant (WTP) with a capacity of about 550 MLD, upgrading of transmission pumping stations, new or rehabilitated transmission mains and construction of underground service reservoirs (UGRs) and SCADA,** more than 1,550 km of distribution pipelines constructed or rehabilitated, establishment of more than 300 district metering areas, more than 500,000 house connections,.

Position: Water Treatment Plant – Process Specialist - International

Activities Performed:

- Collect available water quality data and review the water treatment aspects of previous studies;
- Oversee the independent water quality testing program;
- Determine the design raw water quality & Establish appropriate treated water quality standards;
- Determine the appropriate treatment process;
- Prepare the preliminary design and technical specification of the treatment process; and
- Review the detailed design for the WTP prepared by the contractor.

Name of assignment Project: JICA funded Development of India Specific wastewater Recycle and Ruse Guidance Document for non-potable applications

From: Apr'2014 **To:** 2015 (with intermittent input)

Client: CPHEEO (Min of Urban Development) & JICA

Location: Delhi

Position Held: Project Director and Technical Reviewer

Main Project Features: Development of India Specific Recycle and Reuse Guidance Document as an amendment to Chapter 7 of the CPHEEO Sewerage Manual - 2015

Description of Duties: Directing team of engineers and scientists for the development of reuse guidance document, provide input on International standards on recycle and reuse (USEPA reuse document 2012), review of technical aspects of the manual and input on necessity & implementation on Recycle and Reuse of wastewater in India for non-potable applications.

Name of assignment Project: Project Management Consultancy for Yamuna Action Plan (Phase III) Project (JICA assisted)
From: Mar'2012 **To:** Present (now with intermittent input)
Client : Delhi Jal Board
Location: Now Delhi
Position Held: Project Manager / Team Leader
Main Project Features: The Project consists of DPR preparation, Basis of Design, Detailed Engineering Design for activated sludge process with nutrient control and power generation, design review & construction management and overall project management with client liaison for sewerage management in the three catchment areas of Kondli, Rithala and Okhla. It includes. **The estimated project cost is INR 1690 Crores**:
Demolition and new Construction of **Okhla WWTP 564 MLD with nutrient removal** (MLE Process) with **Sludge Treatment for Class A sludge** and Ultraviolet disinfection to meet new discharge standards, power generation
Rehabilitation of existing **Kondli (210 MLD) and Rithala (182 MLD)** – with digester upgradation and power generation,
Construction of Tertiary Treatment Plants at Okhla, Kondli and Rithal to meet new discharged standards
Sewer rehabilitation and/or replacement - in Kondli, and Rithala zones
Description of Duties: Client management, Project Management, JICA appraisal, ensuring compliance with the e-governance procedure of the client and Government of India. As a Technical Advisor review of the design, suitability of the technologies for process as well as sludge treatment, optioneering, finalization of the technical specification of the various project components. Assist the team and client on various aspects of bid management system like pre-qualification, bid evaluation and finalization of contracts.

Name of assignment Project: JICA funded Consultancy Services for Anuradhapura Integrated Water Supply Project
From: Apr'2014 **To:** 2015 (with intermittent input)
Client : National Water Supply & Drainage Board (NWSDB), Sri Lanka
Location: Anuradhapura, Sri Lanka
Position Held: Water Treatment Plant Process Expert
Main Project Features: The Project consists of the following components:
Mahakanadarawa Water Treatment Plant: Consists of intake, sedimentation basin, rapid sand filter, clear water tank and pump station with capacity of 9,500m3/d (phase 1) and 19,000m3/d (phase 2) including process loss of 5%.
Wahalkada Water Treatment Plant: Consists of intake, sedimentation basin, rapid sand filter, clear water tank and pump station with capacity of 14,500m3/d (phase 1) and 29,000m3/d (phase 2) including process loss of 5%
226km of transmission pipelines, 532km of distribution mains and 1,595km of distribution sub mains ; 15 elevated tanks with capacity of 250m3 to 1,250m3; 8 ground sumps with capacity of 500m3 to 1,000m3 and pumping stations
Description of Duties: Duties include preparation of basis of design - selection of treatment process, Detailed design, review of drawings and preparation of Bid document and specifications

Name of assignment or Project: JICA funded Agra Water Supply Project
Year : 2009- present
Location: Agra (India)
Client: Uttar Pradesh Jal Nigam
Position Held : International Water Process Expert (2009 to 2012) and Project Director (2012 till date)
Main project features: Project includes transmission (130 km) and distribution systems, water treatment plants with expansion capacity of 144,000 cu m/d which involves MBBR process for nitrogen and BOD removal followed by Ultrafiltration membrane treatment. The project also includes the rehabilitation of two exiting WTPs (WWI and WWIIA) with capacity of **225,000 cu m/d** and **144,000 cum/d** respectively comprising pre-oxidation with gaseous chlorine, coagulation/flocculation, sedimentation followed by conventional media filtration. It also includes distribution system rehabilitation for 5 water supply zones. Construction of **new 144,000 cu m/d** plant with MBBR process followed by UF filtration for treatment of polluted Yamuna River water to potable standards. **The estimated Project Cost is INR 2880 Crores.**
Activities Performed: Responsible for definition and evaluation of various treatment processes, selection of most appropriate process including evaluation of post RO treatment for TDS removal, design and development of technical specifications, bid documents, evaluation of pre-qualification and assisting UPJN in selection of the contractor for various project components including the **144 MLD advanced WTP with MBBR process followed by generated bio-solids management –(since the process selected is a wastewater process – the sludge generated is like bio-solids)**, and supervision. During supervision responsible for review of contractor's designs, drawings, Quality Assurance Plans and technical specifications submissions and will be responsible for supervision of testing and commissioning (including review of commissioning tests), review of As-Built Drawings and preparation of O&M Manuals.

Name of assignment or Project: JBIC funded Cauvery Water Supply and Sewerage Project, Stage IV, Phase II
Year : 2007- 2012 (WTP expert 2007 to 2010) (Project Director – 2010 till date with intermittent input)
Location: Bangalore
Client: Bangalore Water Supply & Sewerage Board (BWSSB)
Position Held : Water Treatment Plant Design Expert
Main project features: Project includes water supply component comprising of 16 km raw water transmission main, a **550 MLD water treatment plant, 185 km clear water transmission / feeder pipelines up to 2700 mm diameter, and three pumping stations, including SCADA** and distribution system rehabilitation and UFW reduction for the full city covering 6.2 Lakh consumer connection. The Project cost is INR 3300 Crores.
Activities Performed: Responsible for design and development final design, technical specifications, bid documents, evaluation of pre qualification and assisting BWSSB in selection of the contractor for **construction of 550 MLD water treatment** plant with **Dissolved Air Flotation technology (DAF), and supervision. During process selection evaluated and prepared design of alternative treatment technologies including but not limited to high rate clarification, ballasted flocculation, dissolved air flotation, and membrane filtration along with the conventional treatment process.** During supervision responsible for review of contractor's designs, drawings, Quality Assurance Plans and technical specifications submissions, supervision of testing and commissioning (including review of commissioning tests), review of As-Built Drawings and preparation of O&M Manuals.

Name of assignment or Project: JICA funded Hussain Sagar Lake Improvement Project
Year : 2007- 2010 and 2013 to 2015 (with intermittent input)
Location: Hyderabad (India)
Client: Hyderabad Metropolitan Development Authority
Main project features: Project includes setting up of Waste Water Treatment Plant (30 MLD, 20 MLD, 5 ML) with nutrient removal and Tertiary Level treatment with membrane filtration along with collection system like sewer transmission mains and pumping stations and sludge dewatering and disposal for all the WWTPs. The Project Cost is INR 320 Crores.
Position Held: Project Manager / Team Leader
Activities Performed: Responsible for overall management of the project, client interaction, liaison with JICA, quality control. He was also responsible for design and development of technical specifications, bid documents, evaluation of pre-qualification and assisting HMDA in selection of the contractor for various project components.

Name of assignment or Project: Reclaimed Water Reuse Project, MSPGCL, Mumbai (project funded after completion of USAID study on reuse)
Year: 2010 – 2012
Location: Nagpur & Mumbai, India
Position Held: **Project Director, Process Expert and expert in developing Reuse product**
Activities Performed: Management of the Project Team from the technical point of view, review of the technical specifications, bid document, participate in technical discussions with client and technology providers and specialists **for the 130,000 cu m/d (130 MLD)** wastewater reuse project. The high quality treated wastewater will be pumped from the City of Nagpur for a distance of 18 Kms at the MSPGCL's Koradi Thermal Power Station, wherein the treated water will be used for cooling towers. The contractors were evaluated against four treatment options; conventional ASP, Sequential Batch Reactors, Membrane Bio-reactor (MBR) and Bio-tower process. All of these processes, except MBR process were required to provide tertiary filtration either through membrane or via dual media filtration. The project has been completed and commissioned from 2015. This has been the unique project where treated water is being used by Mahagenco as cooling water for its thermal power plant and provides about 15 cr annually to Nagpur Municipal Corporation for providing sewage for this facility.

Name of assignment or Project: Integrated Water Resource Management (IWRM) – V-valley Reuse Project
Year: 2010-2011
Location: Bangalore
Position Held : International Expert and Lead Member of the Reuse Water Process Plant Design Team
Activities Performed: Responsible for design and development of technical specifications, bid documents, evaluation of pre-qualification and assisting BWSSB in selection of the contractor for construction of **130 MLD wastewater reuse plant**. As a team leader, has evaluated and provided design of alternative treatment technologies including but not limited to conventional ASP, MBR, MBR with GAC and Conventional ASP + Membrane filtration with GAC. The bid specifications for all of these alternatives were prepared, with shortlisting of Contractors. Final Bid document has been submitted to shortlisted contractors for submission.

Name of assignment or Project: Final Design to implement Intermediate Ozonation at the Okville Water Purification Plant (WPP) in the Region of Halton, Ontario, Canada
Year : 1995-2001
Location: Canada
Client: Hamilton Water Department

Main project features: Final Design to implement Intermediate Ozonation at the Okville Water Purification Plant (WPP)
Position Held : Water Treatment Design Expert
Activities Performed: Developed preliminary and final design to implement intermediate ozonation at the **270,000 cu m/d (60 IMGD)** Oakville Water Purification Plant (WPP). The ozonation system design consists of developing ozone system sizing and contactor layout to meet both disinfection and taste & odour demand during the treatment process.

Name of assignment or Project: Up gradation of Existing Wastewater treatment plant of 1.2 billion gallons per day, City of Detroit, Michigan
Year : 1995-2001
Location: Michigan (USA)
Client: Detroit Water and Sewerage Department (DWSD)
Main project features: upgrades of existing WWTP of 1.2 billion gallons per day with nutrient removal and sludge management using Class A solids to meet EPA solids regulation.
Position Held : Wastewater Treatment Expert with focus on sludge/bio-solids management
Activities Performed. Served as a member of the conceptual design team developing design criteria, facility layouts, and cost estimates for nutrient removal upgrades the WWTP with Sludge thickening/dewatering (centrifuge), sludge Drying for Class A with Lime addition.

Name of assignment or Project: Sludge Dewatering using Belt Filtration process – Impact of polymer and roller performance
Year : 1992-1995
Location: Norfolk, Virginia (USA)
Client: Hampton Roads Sanitation District (HRSD)
Main project features: Comprehensive facility analysis for sludge management and treatment optimization at five WWTPs being operated by HRSD
Position Held : Wastewater Treatment Process Specialist
Activities Performed: Served as the process specialist for a comprehensive analysis of existing WWTPs treatment plants within Hampton, Newport News, Virginia Beach, Norfolk, Suffolk, and Williamsburg area. Specific tasks included gathering plant process data, monitoring of unit operations with key plant staff and optimization of sludge management and disposal using belt filter press, formation of cake solids and drying requirements for disposal. Based on the operations analysis and optimized scheme was recommended for use of polymer with percent solids capture and roller press pressures to get increased solids dewatering.

Language:

Language	Read	Write	Speak
English	Excellent	Excellent	Excellent
Hindi	Excellent	Excellent	Excellent

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describes my qualifications, my experience and me.

[Signature of staff member and authorized representative of the Firm]
Full name of staff member: Dr. Uday G. Kelkar
Full name of authorized representative: Mr. Pradipto Sarkar

Date: _____
Day/Month/Year