

		Francis, Adam J. and Skitmore, Martin (2005)	4	Pollution and Safety Rules
			5	Exploration
			6	Embargoes
2	LEGAL	Ruqaya Al-Sabah, Carol C. Menassa, Awad Hanna, (2012)	1	Cost of compliance to regulators requirements
		Nida Azhar, Rizwan U. Farooqui and Syed M. Ahmed, (2008)	2	Numbe of non-compliance events
		Francis, Adam J. and Skitmore, Martin (2005)	3	Quality and availability of regulator documentation
			4	Site condition problems
3	SOCIAL	Ruqaya Al-Sabah, Carol C. Menassa, Awad Hanna, (2012)	1	Social and Cultural factors
		B.P. Sunjka and U. Jacob, (2013)		
		Adnan Enshassi, Sherif Mohamed, Saleh Abushaban, (2009)		
		Francis, Adam J. and Skitmore, Martin (2005)		
4	NATURAL	Ruqaya Al-Sabah, Carol C. Menassa, Awad Hanna, (2012)	1	Flood
		Chidambaram Ramanathan, SP Narayanan and Arazi B Idrus (2012)	2	Earthquake
			3	Landslide
			4	Fire
			5	Wind Damage
			6	Lighting
			7	Weather
5	DESIGN	Ruqaya Al-Sabah, Carol C. Menassa, Awad Hanna, (2012)	1	Mistakes and discrepancies in design documents
		Chidambaram Ramanathan, SP Narayanan and Arazi B Idrus (2012)	2	Delays in producing design documents
		Mohammad A. Mustafa, and Jamal F. Al-Bahar, (1991)	3	Unclear and inadequate details in drawings
		Sadi A. Assaf, Sadiq Al-Hejji (2006)	4	Complexity of project design
		Francis, Adam J. and Skitmore, Martin (2005)	5	Insufficient data collection and survey before design
			6	Misunderstanding of owner's requirements by design engineer
			7	Inadequate design-team experience
			8	Un-use of advanced engineering design software
6	PROJECT / CONST.	Ruqaya Al-Sabah, Carol C. Menassa, Awad Hanna, (2012)	1	Original contract duration is too short
		Long Le-Hoai, Young Dai Lee, and Jun Yong Lee, (2008)	2	Legal disputes b/w various parts
		Adnan Enshassi, Sherif Mohamed, Saleh Abushaban, (2009)	3	Inadequate definition of substantial completion
		Chidambaram Ramanathan, SP Narayanan and Arazi B Idrus (2012)	4	Ineffective delay penalties
		Mohammad A. Mustafa, and Jamal F. Al-Bahar, (1991)	5	Type of construction contract (Turnkey, construction management, etc.)
		Sadi A. Assaf, Sadiq Al-Hejji (2006)	6	Type of project bidding and award (negotiation, low bidder,.)

		(2012)	3	Inflation / price fluctuation
		Mohammad A. Mustafa, and Jamal F. Al-Bahar, (1991)	4	Unavailability of financial incentive for contractor t ahead of schedule
		Motaleb, O and Kishk, M (2010)	5	Retention
		Nida Azhar, Rizwan U. Farooqui and Syed M. Ahmed, (2008)	6	Assessment of Liquidated damages
		Francis, Adam J. and Skitmore, Martin (2005)	7	Indirect, consequential and punitive damages
			8	Market share of organization
			9	Liquidity of organization
			10	Cash flow of project
			11	Profit rate of project
			12	Overhead percentage of project
			13	Project design cost
			14	Material and equipment cost
			15	Project labour cost
			16	Project overtime cost
			17	Motivation cost
			18	Cost of rework
			19	Cost of variation orders
			20	Waste rate of materials
			21	Regular project budget update
			22	Cost control system
			23	Differentiation of currency price
			24	Inflation
			25	Availability of Funds from Client
			26	Exchange Rate Fluctuation
			27	Financial Default of Subcontractor
			28	Non-Convertibility
8	MANAGEMENT	Ruqaya Al-Sabah, Carol C. Menassa, Awad Hanna, (2012)	1	Learning from own experience and past history
		Nida Azhar, Rizwan U. Farooqui and Syed M. Ahmed, (2008)	2	Learning from best practice and experience of other
		B.P. Sunjka and U. Jacob, (2013)	3	Work group
		Adnan Enshassi, Sherif Mohamed, Saleh Abushaban, (2009)	4	Review of failures and solving them
			5	Project complexity
			6	Sequencing of work according to schedule
9	QUALITY	Ruqaya Al-Sabah, Carol C. Menassa, Awad Hanna, (2012)	1	Conformance to specification
		Adnan Enshassi, Sherif Mohamed, Saleh Abushaban, (2009)	2	Quality assessment system in organization
		Francis, Adam J. and Skitmore, Martin (2005)	3	Quality training / meeting

			4	Material and Equipment Fire and Theft
			5	Application of Health & Safety factors in organization
			6	Project location is safe to reach
			7	Reportable accidents rate in project
			8	Assurance rate of project
11	CONSULTANT	Mamoon M. Atout (2013)	1	Incomplete contract documents
		B.P. Sunjka and U. Jacob, (2013)	2	Incomplete drawings
		Long Le-Hoai, Young Dai Lee, and Jun Yong Lee, (2008)	3	Week level of design management during design
		Chidambaram Ramanathan, SP Narayanan and Arazi B Idrus (2012)	4	Slow or fast response
		Abdullah Albogamy, Darren Scott, Nashwan Dawood, Ghanim Bekr, (2013)	5	Drawing & B.O.Q. approved for construction
		Sadi A. Assaf, Sadiq Al-Hejji (2006)	6	Duration of inspection procedure
		Motaleb, O and Kishk, M (2010)	7	Experience of Staff in Management & Technical Inspection
		Ren, Z, Atout, M and Jones, J (2008)	8	Delay in submittal and approval
			9	Level of communication of Consultant staff
			10	Level of quality control
			11	Level of response to technical enquiry's
			12	Changes in drawings and specifications
			13	Technical site staff on site full time
			14	Poor design management
			15	Improper project feasibility study
			16	mistakes in design
			17	Delay in approving major changes in the scope of work by consultant
			18	Inflexibility (rigidity) of consultant
			19	Conflicts between consultant and design engineer

	Abdullah Albogamy, Darren Scott, Nashwan Dawood, Ghanim Bekr, (2013)	4	Lack coordination with subcontractors
	Sadi A. Assaf, Sadiq Al-Hejji (2006)	5	Centralization with top management
	Motaleb, O and Kishk, M (2010)	6	Delayed mobilization
	Ren, Z, Atout, M and Jones, J (2008)	7	Incompetent contractor staff
		8	Poor planning, scheduling or resource management
		9	Poor quality control
		10	Congested construction site
		11	Mistakes during construction
		12	Lack of experience of similar projects
		13	Shortage of materials
		14	Poor quality of materials
		15	Material specifications
		16	Delay of delivery
		17	Shortage of manpower
		18	Inadequate skill of manpower
		19	Low productivity
		20	Unavailability of equipment on request
		21	Wrong allocation of equipments on site
		22	Financing the project by contractor
		23	Irregular payments of sub-contractors
		24	Unexpected weather conditions
		25	Inadequate site investigation
		26	Different nationalities of workforce on site
		27	Problems with neighbours
		28	Preparing the method statement for each work activity
		29	Work Permits
		30	Low Motivation / Morale
		31	Strike
		32	Absenteeism
		33	Conflicts b/w contractor and other parties (consultant, owner)
		34	Improper construction methods implemented by contractor
		35	Delays in sub-contractors work
		36	Frequent change of sub-contractors because of the inefficient work
		37	Severe overtime
		38	Lack of responsibility
		39	Contract management
		40	Quality assurance / Control
		41	Poor site management and supervision
		42	Obsolete or unsuitable construction methods
		43	Lack of Training personnel and management support model construction operation
		44	Incompetent project team
		45	Inadequate project management assistance
		46	Inaccurate time estimating

		Chidambaram Ramanathan, SP Narayanan and Arazi B Idrus (2012)	4	Project objectives are not very clear
		Abdullah Albogamy, Darren Scott, Nashwan Dawood, Ghanim Bekr, (2013)	5	Nomination of Sub-contractors and suppliers and E construction management
		Sadi A. Assaf, Sadiq Al-Hejji (2006)	6	Many provisional sums and prime cost
		Motaleb, O and Kishk, M (2010)	7	Duration is not enough for constructing the project
		Ren, Z, Atout, M and Jones, J (2008)	8	contractor
			9	Routine of government authorities and approvals
			10	Irregular attending of weekly meetings
			11	Late decision making
			12	late approval for payment
			13	Lack of capability of client representative
			14	Lack of experience of client in construction
			15	Client financial difficulties
			16	Unreasonable constraint to client
			17	Delay to furnish and deliver the site to the contractor owner
			18	Late in revising and approving design documents by
			19	Delay in approving shop drawings and sample materials
			20	Poor communication and coordination by owner and parties
			21	Conflicts between joint-ownership of the project
			22	Unavailability of incentives for contractor for finishing of schedule
			23	Suspension of work by owner
			24	Breach or modifications of contract by owner
			25	Unrealistic contract duration imposed by client
			26	Slow site clearance difficulties
			27	Financial difficulties of owner
			28	Slow payment of completed works
14	LABOUR/ EQUIPMENT	B.P. Sunjka and U. Jacob, (2013)	1	Equipment breakdowns
		Long Le-Hoai, Young Dai Lee, and Jun Yong Lee, (2008)	2	Shortage of equipment
		Adnan Enshassi, Sherif Mohamed, Saleh Abushaban, (2009)	3	Low level of equipment-operator's skill
		Chidambaram Ramanathan, SP Narayanan and Arazi B Idrus (2012)	4	Low productivity and efficiency of equipment
		Sadi A. Assaf, Sadiq Al-Hejji (2006)	5	Lack of high-technology mechanical equipment
			6	Shortage of labors
			7	Unqualified workforce
			8	Nationality of labors
			9	Low productivity level of labors
			10	Personal conflicts among labors
			11	Financial difficulties

		(2012)	3	Delay in material delivery
		Sadi A. Assaf, Sadiq Al-Hejji (2006)	4	Damage of sorted material while they are needed
			5	Delay in manufacturing special building materials
			6	Late procurement of materials
			7	Late in selection of finishing materials due to available many types in market
			8	Rise in the prices of materials
			9	Material quality problems
			10	Shortages of Materials
16	EXTERNAL	B.P. Sunjka and U. Jacob, (2013)	1	Unforeseen ground / weather condition
		Long Le-Hoai, Young Dai Lee, and Jun Yong Lee, (2008)	2	Obsolete technology
		Adnan Enshassi, Sherif Mohamed, Saleh Abushaban, (2009)	3	Problem with neighbours
		Chidambaram Ramanathan, SP Narayanan and Arazi B Idrus (2012)	4	Legal disputes between various parties in the project
		Abdullah Albogamy, Darren Scott, Nashwan Dawood, Ghanim Bekr, (2013)	5	Fraudulent practices and kickbacks
		Mohammad A. Mustafa, and Jamal F. Al-Bahar, (1991)	6	Unforeseen ground conditions
		Sadi A. Assaf, Sadiq Al-Hejji (2006)	7	Geological problems on site
		Motaleb, O and Kishk, M (2010)	8	Effects of subsurface conditions
		Francis, Adam J. and Skitmore, Martin (2005)	9	Delay in obtaining permits from municipality
			10	Hot weather effect on construction activities
			11	Rain effect on construction activities
			12	Unavailability of utilities in site (such as, water, electricity, telephone, etc.)
			13	Effect of social and cultural factors
			14	Traffic control and restriction at job site
			15	Accident during construction
			16	Differing site (ground) conditions
			17	Changes in government regulations and laws
			18	Delay in providing services from utilities (such as water, electricity)
			19	Delay in performing final inspection and certification by third party
			20	Obstacles from Government
			21	Air quality
			22	Noise level
			23	Wastes around the site
			24	Climate condition
				TOTAL RISK VARIABLES

SURVEY TO IDENTIFY SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

JANUARY 2015

INDEX

SL No.	AREA	RESPONDED		REMARKS
		YES	NO	
1	<u>FINANCE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
2	<u>HR-ADMIN</u>	<input type="checkbox"/>	<input type="checkbox"/>	
3	<u>HSEQ</u>	<input type="checkbox"/>	<input type="checkbox"/>	
4	<u>CONTRACTS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
5	<u>DESIGN</u>	<input type="checkbox"/>	<input type="checkbox"/>	
6	<u>CIVIL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
7	<u>MEP</u>	<input type="checkbox"/>	<input type="checkbox"/>	
8	<u>ELECTRICAL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
9	<u>PROJECT MANAGEMENT / GENERAL</u>	<input type="checkbox"/>	<input type="checkbox"/>	

To Fill out (Optional only)

Name of the Respondent

Age of the Respondent

Qualification of the Respondent

Organization of the Respondent

Designation of the Respondent

Gender of the Respondent

Male / Female

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SURVEY TO IDENTIFY SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

NOVEMBER 2014

- QUESTIONNAIRE (FINANCE) -

Dear Sir / Madam,

At the outset, I would like to introduce myself as L. Sreenivasan a Research Scholar at University of Petroleum & Energy Studies (UPES) & working with the Corporation, Transmission & Distribution Division, Abu Dhabi - UAE. This survey is being conducted for a research at the University of Petroleum & Energy Studies, Dehradun - India. The study will help to identify the significant risk factors for estimating Contingency in Construction of substations in UAE.

This survey asks about your experiences of Risk Factors that you have come across which are important while executing the Substation Construction in UAE (IN THE AREA OF FINANCE)

Your response to this survey, or any individual question on the survey, is completely voluntary. You will not be individually identified and your response is used for statistical purposes only.

The typical Activity estimate as given in Project Management Body of Knowledge is depicted below for kind reference and understanding of the "Risk Factor for Contingency estimation" to reach at the "Baseline estimate".

$$\begin{array}{|c|} \hline \text{Nominal Estimates for Activities} \\ \hline \end{array} + \begin{array}{|c|} \hline \text{Estimates for Known Risks} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Baseline of Activity Estimate} \\ \hline \end{array}$$

Name of the Respondent	:	:	Organization of the Respondent	:	:	0
Designation of the Respondent	:	:	Designation of the Respondent	:	:	0
Gender of the Respondent	:	:	Gender of the Respondent	:	:	Male / Female

Please indicate the level of Importance of the following Project Risk Factors while estimating the Contingency for the Project.

Sl. No.	Risk Factors	Importance				
		Not Important	Least Important	More Important	Most Important	
1.	Budgeting of Project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Invoicing by Contractor to Client <i>Help Text : Time taken for submission of Invoice / its correctness / non-invoicing</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Cash In Flow [i.e. Liquidity] <i>Help Text : Advance / Progress / Retention Payments from Client</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Inflation / Price Fluctuation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.	High Interest Rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Exchange Rate Fluctuation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Delay Penalty / Assessment of Penalty by Client	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Acceptance of Work by Client / Consultant <i>Help Text :: Duration for receiving Provisional Acceptance / Final Acceptance of the Project</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Periodic Audits <i>Help Text : Internal / External Audits</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

For suggestions please :-

Thank you very much for taking the time to complete our survey. Kindly send your filled up forms to sreenivasan@rediffmail.com (or) Contact +971 50 617119.

SURVEY TO IDENTIFY SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

NOVEMBER 2014

- QUESTIONNAIRE (HR / ADMINISTRATION) -

Dear Sir / Madam,

At the outset, I would like to introduce myself as L. Sreenivasan a Research Scholar at University of Petroleum & Energy Studies (UPES) & working with the Corporation, Transmission & Distribution Division, Abu Dhabi - UAE. This survey is being conducted for a research at the University of Petroleum & Energy Studies, Dehradun - India. The study will help to identify the significant risk factors for estimating Contingency in Construction of substations in UAE.

This survey asks about your experiences of Risk Factors that you have come across which are important while executing the Substation Construction in UAE (IN THE AREA OF HR / ADMINISTRATION)

Your response to this survey, or any individual question on the survey, is completely voluntary. You will not be individually identified and your responses are used for statistical purposes only.

The typical Activity estimate as given in Project Management Body of Knowledge is depicted below for kind reference and understanding of the "Risk Factor for Contingency estimation" to reach at the "Baseline estimate".

$$\boxed{\text{Nominal Estimates for Activities}} + \boxed{\text{Estimates for Known Risks (or Contingency Reserve)}} = \boxed{\text{Baseline of Activity Estimate}}$$

Name of the Respondent	:	:	Organization of the Respondent	:	:
	:	:	0	:	:
Designation of the Respondent	:	:	Designation of the Respondent	:	:
	:	:	0	:	:
Gender of the Respondent	:	:	Gender of the Respondent	:	:
	:	:	0	:	Male / Female

Please indicate the level of Importance of the following Project Risk Factors while estimating the Contingency for the Project.

Sl. No.	Risk Factors	Importance				
		Not Important	Least Important	More Important	Most Important	
1	Laws and Regulations and the changes during the tenure of the contract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Requirement for No Objection (NOC) / Approvals from Statutory Bodies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Cultural Impact / Personality Impact / Language Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	Employee Turnover & Availability of Skilled Personnel <i>Help Text : Resignation / Termination</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6	Resources Deployment <i>Help Text : Timely deployment with proper skill set enables timely completion of project.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	Productivity of Human Resources <i>Help Text : Motivation will lead to enhanced Morale; leading to better productivity.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	Utilization of Resources <i>Help Text : Role Clarity & Appropriate Assignment enhances resources utilization.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	LEADERSHIP qualities of Key personal <i>Help Text : Such as Decision Making / Responsibility / Unethical Acts / Behaviour.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10	Resistance to change by Team Members <i>Help Text : Non acceptance of assigned role due to possession of different skill set / experience.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11	Appropriate Training & Development of Skill Set	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12	Conflict among Stakeholders <i>Help Text : Stakeholders are Team Members, Clients, Consultants, Subcontractors, Vendors, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13	Extreme Weather condition (Heat) / Working Hours during Summer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14	Natural Calamity <i>Help Text : Such as Flood / Rain / Fog / Sand Storm / Fire / Earthquake</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

For suggestions please :-

SURVEY TO IDENTIFY SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

NOVEMBER 2014

- QUESTIONNAIRE (HSEQ) -

Dear Sir / Madam,

At the outset, I would like to introduce myself as L. Sreenivasan a Research Scholar at University of Petroleum & Energy Studies (UPES) & working with the Corporation, Transmission & Distribution Division, Abu Dhabi - UAE. This survey is being conducted for a research at the University of Petroleum & Energy Studies, Dehradun - India. The study will help to identify the significant risk factors for estimating Contingency in Construction of substations in UAE.

This survey asks about your experiences of Risk Factors that you have come across which are important while executing the Substation Construction in UAE (IN THE AREA OF HSEQ)

Your response to this survey, or any individual question on the survey, is completely voluntary. You will not be individually identified and your responses are used for statistical purposes only.

The typical Activity estimate as given in Project Management Body of Knowledge is depicted below for kind reference and understanding of the "Risk Factor for Contingency estimation" to reach at the "Baseline estimate".

$$\boxed{\text{Nominal Estimates for Activities}} + \boxed{\text{Estimates for Known Risks (or Contingency Reserve)}} = \boxed{\text{Baseline of Activity Estimate}}$$

Name of the Respondent	:	:	Organization of the Respondent	:	:	0
Name of the Respondent	:	:	Designation of the Respondent	:	:	0
Qualification of the Respondent	:	:	Gender of the Respondent	:	:	Male / Female

Please indicate the level of Importance of the following Project Risk Factors while estimating the Contingency for the Project.

	Risk Factors	Importance				
		Not Important	Least Important	More Important	Most Important	
1.	Extreme Weather condition (Heat) / Working Hours during Summer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Natural Calamity <i>Help Text : Such as Flood / Rain / Fog / Sand Storm / Fire / Earthquake</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Geo-Technical conditions <i>Help Text : Such as Loose Soil, Water logging, Underground surface, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Chemical Pollution / Air Quality / Noise Level / Waste / Hazrdous materials around the work place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Laws and Regulations and the changes during the tenure of the contract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.	HSE Plan at site, Induction of Site team, Awareness Program, Training & Safety Signs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Inspection & Audits, Housekeeping & Control, Risk Assessment & Method Statements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Competency Approval / Work Permits from Competent Authorities <i>Help Text : For Carrying out the work at existing installations.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Supervision of Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10.	Shutdown for carrying out Modification / Tie-in <i>Help Text : Time frame for carrying out the work due to danger of impacts to existing installations.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11.	Incidents / Serious Injuries / Fatalities / Emergency Evacuation & Rescue Plans / Safety Drills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12.	Theft & Vandalism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13.	Warranty requirements <i>Help Text : Extended Warranties / Additional Warranties</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14.	Project Proximity (Location and Accessibility) <i>Help Text : Location and Accessibility along with availability of First Aid / Hospitals</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Please indicate the level of Importance of the following Project Risk Factors while estimating the Contingency for the Project.

Sl. No.	Risk Factors	Importance				
		Not Important	Least Important	More Important	Most Important	
5	Quality Management System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	Quality of Material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	Quality of Workmanship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	Material Handling / Storing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10	Damage to Structure / Equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

For suggestions please :-

Thank you very much for taking the time to complete our survey. Kindly send your filled up forms to sreenivasan@rediffmail.com (or) Contact +971 50 6171119

SURVEY TO IDENTIFY SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

NOVEMBER 2014

- QUESTIONNAIRE (CONTRACTS) -

Dear Sir / Madam,

At the outset, I would like to introduce myself as L. Sreenivasan a Research Scholar at University of Petroleum & Energy Studies (UPES) & working with the Corporation, Transmission & Distribution Division, Abu Dhabi - UAE. This survey is being conducted for a research at the University of Petroleum & Energy Studies, Dehradun - India. The study will help to identify the significant risk factors for estimating Contingency in Construction of substations in UAE.

This survey asks about your experiences of Risk Factors that you have come across which are important while executing the Substation Construction in UAE (IN THE AREA OF CONTRACT MANAGEMENT)

Your response to this survey, or any individual question on the survey, is completely voluntary. You will not be individually identified and your responses are used for statistical purposes only.

The typical Activity estimate as given in Project Management Body of Knowledge is depicted below for kind reference and understanding of the "Risk Factor for Contingency estimation" to reach at the "Baseline estimate".

$$\text{Nominal Estimates for Activities} + \text{Estimates for Known Risks (or Contingency Reserve)} = \text{Baseline of Activity Estimate}$$

Name of the Respondent

0

Organization of the Respondent

0

Designation of the Respondent

0

Designation of the Respondent

0

Gender of the Respondent

0

Gender of the Respondent

Male / Female

Please indicate the level of Importance of the following Project Risk Factors while estimating the Contingency for the Project.

	Risk Factors	Importance				
		Not Important	Least Important	More Important	Most Important	
	Variation to the Contract <i>Help Text : Additions and / or Deletions to the Scope of Work. Changes to Contract Conditions.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Suspension of Work by Client	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Acceptance of Work by Client / Consultant <i>Help Text :: Duration for receiving Provisional Acceptance / Final Acceptance of the Project</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Delivery of Materials / Equipment / Execution of Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Vendor Performance and Relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Default of the Vendor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Accidents & Injuries <i>Help Text : Insurances and Claims.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

For suggestions please :-

Thank you very much for taking the time to complete our survey. Kindly send your filled up forms to sreenivasan@rediffmail.com (or) Contact +971 50 6171119

SURVEY TO IDENTIFY SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

NOVEMBER 2014

- QUESTIONNAIRE (DESIGN) -

Dear Sir / Madam,

At the outset, I would like to introduce myself as L. Sreenivasan a Research Scholar at University of Petroleum & Energy Studies (UPES) & working with the Corporation, Transmission & Distribution Division, Abu Dhabi - UAE. This survey is being conducted for a research at the University of Petroleum & Energy Studies, Dehradun - India. The study will help to identify the significant risk factors for estimating Contingency in Construction of substations in UAE.

This survey asks about your experiences of Risk Factors that you have come across which are important while executing the Substation Construction in UAE (IN THE AREA OF DESIGN & ENGINEERING WORKS)

Your response to this survey, or any individual question on the survey, is completely voluntary. You will not be individually identified and your responses are used for statistical purposes only.

The typical Activity estimate as given in Project Management Body of Knowledge is depicted below for kind reference and understanding of the "Risk Factor for Contingency estimation" to reach at the "Baseline estimate".

$$\boxed{\text{Nominal Estimates for Activities}} + \boxed{\text{Estimates for Known Risks (or Contingency Reserve)}} = \boxed{\text{Baseline of Activity Estimate}}$$

Name of the Respondent	:	:	Organization of the Respondent	:	:	0
Name of the Respondent	:	:	Designation of the Respondent	:	:	0
Qualification of the Respondent	:	:	Gender of the Respondent	:	:	Male / Female

Please indicate the level of Importance of the following Project Risk Factors while estimating the Contingency for the Project.

Sl. No.	Risk Factors	Importance				
		Not Important	Least Important	More Important	Most Important	
1	Laws and Regulations and the changes during the tenure of the contract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Requirement for No Objection (NOC) / Approvals from Statutory Bodies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Site Level & Access road confirmation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	Geo-Technical conditions <i>Help Text : Such as Loose Soil, Water logging, Underground surface, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	Input from Client / Consultant / Other Contractors <i>Help Text : Timely receipt of inputs helps project completion on time.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6	Provision of Interfaces details by Client / Consultant for Tie-ins <i>Help Text : Timely receipt of interface details leads to better project coordination.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	Preparation of Design Documents <i>Help Text : Time for preparation, its schedule including the necessary inter-team coordination.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	Approval of Design Documents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	Decision making by Client <i>Help Text : Delayed decisions leads to delay completion of project.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10	Duration is short / Un realistic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11	Details in Design Documents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12	Competence of Design Engineer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13	Quality of Workmanship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14	Employee Turnover & Availability of Skilled Personnel <i>Help Text : Resignation / Termination</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

For suggestions please :-

SURVEY TO IDENTIFY SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

NOVEMBER 2014

- QUESTIONNAIRE (CIVIL) -

Dear Sir / Madam,

I would like to introduce myself as L. Sreenivasan a Research Scholar at University of Petroleum & Energy Studies (UPES) & working with the Corporation, Transmission & Distribution Division, Abu Dhabi - UAE. This survey is being conducted for a research at the University of Petroleum & Energy Studies, Dehradun - India. The study will help to identify the significant risk factors for estimating Contingency in Construction of substations in UAE.

This survey asks about your experiences of Risk Factors that you have come across which are important while executing the Substation Construction in UAE (IN THE AREA OF CIVIL WORKS)

Your response to this survey, or any individual question on the survey, is completely voluntary. You will not be individually identified and your responses will be used for statistical purposes only.

$$\begin{array}{c} \text{Nominal Estimates for Activities} \\ \text{+} \\ \text{Estimates for Known Risks} \\ \text{(or Contingency Reserve)} \\ \text{=} \\ \text{Baseline of Activity Estimate} \end{array}$$

Name of the Respondent	:	:	Organization of the Respondent	:	:
	:	:		:	:
Designation of the Respondent	:	:	Designation of the Respondent	:	:
	:	:		:	:

Sl. No.	Risk Factors	Importance				
		Not Important	Least Important	More Important	Most Important	
1	General / Contractual Matters					
1.1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2	Vendor Performance and Relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.3	Default of the Vendor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.4	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.6	Natural Calamity <i>Help Text : Such as Flood / Rain / Fog / Sand Storm / Fire / Earthquake</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.7	Laws and Regulations and the changes during the tenure of the contract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Soil Investigation					
2.1	Input from Client / Consultant / Other Contractors <i>Help Text : Timely receipt of inputs helps project completion on time.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Piling / Substructure Works					
3.3.1	Requirement for Building Permits / Civil Defence Approvals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2	Site Level & Access road confirmation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3	Geo-Technical conditions <i>Help Text : Such as Loose Soil, Water logging, Underground surface, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4	Duration is short / Un realistic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.6	Quality of Workmanship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please indicate the level of importance of the following Project Risk Factors while estimating the Contingency for the Project.

Sl.	Risk Factors				Not Important	Least Important		More Important	Most Important
4	Superstructure Works								
4.1	Availability of Raw Materials / Construction Materials				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2	Duration is short / Un realistic				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.3	Extreme Weather condition (Heat) / Working Hours during Summer				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4	Quality of Workmanship				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.5	Accidents & Injuries				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.6					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Finishing Works								
5.1	Duration is short / Un realistic				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2	Availability of Raw Materials / Construction Materials				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3	Inflation / Price Fluctuation				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.4	Quality of Material				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.5	Quality of Workmanship				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.6	Accidents & Injuries				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.7	Material Handling / Storing				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.8	Air Quality / Noise Level / Waste around the work place				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please indicate the level of importance of the following Project Risk Factors while estimating the Contingency for the Project.

Sl. No.	Risk Factors					
		Not Important	Least Important	More Important	Most Important	
6	External Works					
6.1	Input from Client / Consultant / Other Contractors <i>Help Text : Timely receipt of inputs helps project completion on time.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.2	Competency Approval / Work Permits from Competent Authorities <i>Help Text : For Carrying out the work at existing installations.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4	Quality of Workmanship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.5	Extreme Weather condition (Heat) / Working Hours during Summer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.6	Accidents & Injuries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.7	Inflation / Price Fluctuation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

our suggestions please :-

Thank you very much for taking the time to complete our survey. Kindly send your filled up forms to sreenivasanl@rediffmail.com (or) Contact +971 50 61711

SURVEY TO IDENTIFY SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

NOVEMBER 2014

- QUESTIONNAIRE (MEP) -

Dear Sir / Madam,

In the outset, I would like to introduce myself as L. Sreenivasan a Research Scholar at University of Petroleum & Energy Studies (UPES) & working with Corporation, Transmission & Distribution Division, Abu Dhabi - UAE. This survey is being conducted for a research at the University of Petroleum & Energy Studies, Dehradun - India. The study will help to identify the significant risk factors for estimating Contingency in Construction of substations in UAE. This survey asks about your experiences of Risk Factors that you have come across which are important while executing the Substation Construction works (IN THE AREA OF MEP WORKS)

Your response to this survey, or any individual question on the survey, is completely voluntary. You will not be individually identified and your response will be used for statistical purposes only.

The typical Activity estimate as given in Project Management Body of Knowledge is depicted below for kind reference and understanding of the "Risk Factor for Contingency estimation" to reach at the "Baseline estimate".

$$\boxed{\text{Nominal Estimates for Activities}} + \boxed{\text{Estimates for Known Risks (or Contingency Reserve)}} = \boxed{\text{Baseline of Activity Estimate}}$$

Name of the Respondent	:	:	Organization of the Respondent	:	:
	:	:		:	:
Name of the Respondent	:	:	Designation of the Respondent	:	:
	:	:		:	:

Please indicate the level of Importance of the following Project Risk Factors while estimating the Contingency for the Project.

Sl. No.	Risk Factors	Importance				
		Not Important	Least Important	More Important	Most Important	
	General / Contractual Matters					
1	Vendor Selection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Vendor Performance and Relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Default of the Vendor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Natural Calamity <i>Help Text :</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Laws and Regulations and the changes during the tenure of the contract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Requirement for No Objection (NOC) / Approvals from Statutory Bodies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Procurement / Manufacturing					
1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Delivery of Materials / Equipment / Execution of Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Material Handling / Storing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Sub Vendor Performance and Relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Default of the Sub-Vendor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Claims / Variation / Litigation by Supplier / Subcontractor (SubVendors)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please indicate the level of Importance of the following Project Risk Factors while estimating the Contingency for the Project.

Sl. No.	Risk Factors	Not Important	Least Important	More Important	Most Important
	Fabrication / Installation Works				
1	Duration is short / Un realistic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Material Handling / Storing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Quality of Material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Quality of Workmanship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Accidents & Injuries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Natural Calamity <i>Help Text : Such as Flood / Rain / Fog / Sand Storm / Fire / Earthquake</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Testing & Commissioning Works				
1	Decision making by Client <i>Help Text : Delayed decisions leads to delay completion of project.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Witness Engineer by Client for Factory Tests / Type Tests / Site Tests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Failure of Equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Air Quality / Noise Level / Waste around the work place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Operation & Maintenance during Warranty Period including Training to Client representatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Accidents & Injuries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For suggestions please :-

SURVEY TO IDENTIFY SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

NOVEMBER 2014

- QUESTIONNAIRE (ELECTRICAL) -

Dear Sir / Madam,

At the outset, I would like to introduce myself as L. Sreenivasan a Research Scholar at University of Petroleum & Energy Studies (UPES) & working with UPES Corporation, Transmission & Distribution Division, Abu Dhabi - UAE. This survey is being conducted for a research at the University of Petroleum & Energy Studies, Dehradun - India. The study will help to identify the significant risk factors for estimating Contingency in Construction of substations in UAE.

This survey asks about your experiences of Risk Factors that you have come across which are important while executing the Substation Construction in UAE (IN THE AREA OF ELECTRICAL WORKS)

Your response to this survey, or any individual question on the survey, is completely voluntary. You will not be individually identified and your response will be used for statistical purposes only.

$$\text{Nominal Estimates for Activities} + \text{Estimates for Known Risks (or Contingency Reserve)} = \text{Baseline of Activity Estimate}$$

Name of the Respondent	:	:	Organization of the Respondent	:	:
	:	:		:	:
Name of the Respondent	:	:	Designation of the Respondent	:	:
	:	:		:	:

1. 0.	Risk Factors	Importance			
		Not Important	Least Important	More Important	Most Important
1	General / Contractual Matters				
2	Vendor Selection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Vendor Performance and Relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Default of the Vendor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Dependence on external sources <i>Help Text :</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Procurement / Manufacturing				
8	Exchange Rate Fluctuation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Material Handling / Storing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Delivery of Materials / Equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Vendor Performance and Relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Installation Works				
14	Duration is short / Un realistic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Employee Turnover & Availability of Skilled Personnel <i>Help Text : Resignation / Termination</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Material Handling / Storing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Accidents & Injuries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Damage to Structure / Equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please indicate the level of Importance of the following Project Risk Factors while estimating the Contingency for the Project.

Sl. No.	Risk Factors	Importance				
		Not Important	Least Important	More Important	Most Important	
1	Testing & Commissioning Works	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Duration is short / Un realistic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Decision making by Client <i>Help Text : Delayed decisions leads to delay completion of project.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	Provision of Interfaces details by Client / Consultant for Tie-ins <i>Help Text : Timely receipt of interface details leads to better project coordination.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	Witness Engineer by Client for Factory Tests / Type Tests / Site Tests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6	Testing Equipment Availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	Failure of Equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	Employee Turnover & Availability of Skilled Personnel <i>Help Text : Resignation / Termination</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10	Competency Approval / Work Permits from Competent Authorities <i>Help Text : For Carrying out the work at existing Live Substation installations.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11	Quality of Material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12	Quality of Workmanship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13	Shutdown for carrying out Modification / Tie-in <i>Help Text : Controlled Time frame for carrying out the work due to Hazard of impacts upon workers & existing installations.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14	Air Quality / Noise Level / Waste around the work place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15	Accidents & Injuries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

For suggestions please :-

SURVEY TO IDENTIFY SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

NOVEMBER 2014

- QUESTIONNAIRE (PROJECT MANAGEMENT / GENERAL) -

Dear Sir / Madam,

In the outset, I would like to introduce myself as L. Sreenivasan a Research Scholar at University of Petroleum & Energy Studies (UPES) & working with Corporation, Transmission & Distribution Division, Abu Dhabi - UAE. This survey is being conducted for a research at the University of Petroleum & Energy Studies, Dehradun - India. The study will help to identify the significant risk factors for estimating Contingency in Construction of substations in UAE. This survey asks about your experiences of Risk Factors that you have come across which are important while executing the Substation Construction PROJECT (IN THE AREA OF GENERAL PROJECT MANAGEMENT)

Your response to this survey, or any individual question on the survey, is completely voluntary. You will not be individually identified and your response will be used for statistical purposes only.

The typical Activity estimate as given in Project Management Body of Knowledge is depicted below for kind reference and understanding of the "Risk Factor for Contingency estimation" to reach at the "Baseline estimate".

$$\boxed{\text{Nominal Estimates for Activities}} + \boxed{\text{Estimates for Known Risks (or Contingency Reserve)}} = \boxed{\text{Baseline of Activity Estimate}}$$

Name of the Respondent	:	:	Organization of the Respondent	:	:	0
Designation of the Respondent	:	:	Designation of the Respondent	:	:	0

Please indicate the level of Importance of the following Project Risk Factors while estimating the Contingency for the Project.

S. No.	Risk Factors	Importance			
		Not Important	Least Important	More Important	Most Important
Section - A					
This Section Covers the Risk Factors related to General Project Management					
1	Project Charter / Project Management Plan <i>Help Text : Proper Project Charter / Project Mgmt. Plan leads to better Project Outcome.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Project Controls <i>Help Text : Regular Monitoring & proper Control of Variance leads to better Project Performance.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Complexity of project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Scope Baseline Approval by Client / Consultant <i>Help Text : Non Approval / Delayed Approval impacts Project Outcome.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Duration is short / Un realistic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Schedule Baseline Approval by Client / Consultant <i>Help Text : Non Approval / Delayed Approval impacts Project Outcome.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Decision making by Client <i>Help Text : Delayed decisions leads to delay completion of project.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Flexibility of Client / Consultant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Certification of Progress by Client / Consultant <i>Help Text : Delayed certification impacts project cashflow.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Input from Client / Consultant / Other Contractors <i>Help Text : Timely receipt of inputs helps project completion on time.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Provision of Interfaces details by Client / Consultant for Tie-ins <i>Help Text : Timely receipt of interface details leads to better project coordination.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Vendor Selection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Witness Engineer by Client for Factory Tests / Type Tests / Site Tests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Testing Equipment / Commissioning Spares Availability <i>Help Text : Including provision for additional commissioning spare for any unforeseen failures / Testing Equipments, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Failure of Equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please indicate the level of Importance of the following Project Risk Factors while estimating the Contingency for the Project.

Sl. No.	Risk Factors	Importance			
		Not Important	Least Important	More Important	Most Important
6	Snags / Punch List <i>Help Text : Gathering the snags & attending to them while executing the works without leaving for post energization period.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Reporting on LESSONS LEARNED & Action Taken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Communication / Communication Routing with Project Stakeholders <i>Help Text : Stakeholders are Team Members, Clients, Consultants, Subcontractors, Vendors, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Co-ordination between various Stakeholders <i>Help Text : Stakeholders are Team Members, Clients, Consultants, Subcontractors, Vendors, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For suggestions please :-

Thank you very much for taking the time to complete our survey. Kindly send your filled up forms to sreenivasan@rediffmail.com (or) Contact +971 50 6171119

Appendix A3 - Questionnaire # 2 for Objective # 2

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

FEBRUARY 2015

INDEX

Dear Sir / Madam,

At the outset, I would like to introduce myself as L. Sreenivasan a Research Scholar at University of Petroleum & Energy Studies (UPES) & working with Toshiba Corporation, Transmission & Distribution Division, Abu Dhabi - UAE. This survey is being conducted for a research at the University of Petroleum & Energy Studies, Dehradun - India. The study will help to identify the significant risk factors for estimating Contingency in Construction of substations in UAE.

This survey asks about your perception based on your experience of the Probability of occurrence and the Impacts of the identified Significant Group of Risk Factors for the Substation Construction works in UAE.

Your response to this survey, or any individual question on the survey, is completely voluntary. You will not be individually identified and your responses will be used for statistical purposes only.

Table of Questionnaire Sections

SL No.	AREA	RESPONSE ^D		REMARKS
		YES	NO	
1	<u>FINANCE</u>			
2	<u>HR-ADMIN</u>			
3	<u>HSEQ</u>			
4	<u>CONTRACTS</u>			
5	<u>DESIGN</u>			
6	<u>CIVIL</u>			
7	<u>MEP</u>			
8	<u>ELECTRICAL</u>			
9	<u>PROJECT MANAGEMENT / GENERAL</u>			

SAMPLE OF THE SCALE BEING USED

Reference		Probability		Impacts		
Scale	Rating	Range	Detail	Cost	Schedule	Performance
1	Very Low	Upto 10%	Highly unlikely to occur. May occur in exceptional situations.	No increase	No change	Will still achieve all mandatory requirements
2	Low	11% ~ 25%	Most likely will not occur. Infrequent occurrence in past projects.	< 5% increase	< 1 week delay	Minor shortfalls in desirable requirements
3	Moderate	26% ~ 50%	Possible to occur.	5-10% increase	1 - 2 weeks delay	Minor shortfalls in one or more key requirements
4	High	51% ~ 75%	Likely to occur. Has occurred in past projects.	10-20% increase	2 - 4 weeks delay	Major shortfalls in one or more key requirements
5	Very High	76% ~ 100%	Highly likely to occur. Has occurred in past projects.	> 20% increase	> 4 weeks delay	Major shortfall in mandatory requirements

Respondent Details :: To Fill out (Optional only)

Name of the Respondent	
Age of the Respondent	
Qualification of the Respondent	
Organization of the Respondent	
Designation of the Respondent	
Gender of the Respondent	Male / Female

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SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE
FEBRUARY 2015
- QUESTIONNAIRE (FINANCE) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very High
1	Inflation / Price Fluctuation	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	High Interest Rate	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Exchange Rate Fluctuation	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Invoicing by Contractor to Client	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Cash In Flow [i.e. Liquidity]	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Periodic Audits	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your suggestions please :-

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE
FEBRUARY 2015
- QUESTIONNAIRE (HR & ADMIN) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very High
1	Resources Deployment <i>Help Text : Timely deployment with proper skill set enables timely completion of project.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Utilization of Resources <i>Help Text : Role Clarity & Appropriate Assignment enhances resources utilization.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Cultural Impact / Personality Impact / Language Impact	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Natural Calamity <i>Help Text : Such as Flood / Rain / Fog / Sand Storm / Fire / Earthquake</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Requirement for No Objection (NOC) / Approvals from Statutory Bodies	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your suggestions please :-

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE
FEBRUARY 2015
- QUESTIONNAIRE (HSEQ) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very High
1	Natural Calamity <i>Help Text : Such as Flood / Rain / Fog / Sand Storm / Fire / Earthquake</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Laws and Regulations and the changes during the tenure of the contract	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	HSE Plan at site, Induction of Site team, Awareness Program, Training & Safety Signs.	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Inspection & Audits, Housekeeping & Control, Risk Assessment & Method Statements	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Shutdown for carrying out Modification / Tie-in <i>Help Text : Time frame for carrying out the work due to danger of impacts to existing installations.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE
FEBRUARY 2015
- QUESTIONNAIRE (HSEQ) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very High
6	Warranty requirements <i>Help Text : Extended Warranties / Additional Warranties</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Periodic Medical Checks / Physical Exercise / Fitness	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Quality of Material	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Quality of Workmanship	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your suggestions please :-

**SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE
FEBRUARY 2015
- QUESTIONNAIRE (CONTRACTS) -**

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very
1	Variation to the Contract <i>Help Text : Additions and / or Deletions to the Scope of Work. Changes to Contract Conditions.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Suspension of Work by Client	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Acceptance of Work by Client / Consultant <i>Help Text :: Duration for receiving Provisional Acceptance / Final Acceptance of the Project</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Default of the Vendor	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Accidents & Injuries <i>Help Text : Insurances and Claims.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your suggestions please :-

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE
FEBRUARY 2015
- QUESTIONNAIRE (DESIGN) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very H
1	Laws and Regulations and the changes during the tenure of the contract	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Geo-Technical conditions <i>Help Text : Such as Loose Soil, Water logging, Underground surface, etc.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Input from Client / Consultant / Other Contractors <i>Help Text : Timely receipt of inputs helps project completion on time.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Provision of Interfaces details by Client / Consultant for Tie-ins <i>Help Text : Timely receipt of interface details leads to better project coordination.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Approval of Design Documents	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Decision making by Client <i>Help Text : Delayed decisions leads to delay completion of project.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Employee Turnover & Availability of Skilled Personnel <i>Help Text : Resignation / Termination</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE
FEBRUARY 2015
- QUESTIONNAIRE (DESIGN) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very H
8	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your suggestions please :-

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

FEBRUARY 2015

- QUESTIONNAIRE (CIVIL) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very High
A. GENERAL / CONTRACTUAL MATTERS							
1	Default of the Vendor	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Laws and Regulations and the changes during the tenure of the contract	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Requirement for No Objection (NOC) / Approvals from Statutory Bodies	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. SOIL INVESTIGATION							
1	Input from Client / Consultant / Other Contractors <i>Help Text : Timely receipt of inputs helps project completion on time.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Site Level & Access road confirmation	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

FEBRUARY 2015

- QUESTIONNAIRE (CIVIL) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very High
C. PILING / SUB STRUCTURE WORKS							
1	Requirement for Building Permits / Civil Defence Approvals	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2		Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Geo-Technical conditions <i>Help Text : Such as Loose Soil, Water logging, Underground surface, etc.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Duration is short / Un realistic	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Quality of Workmanship	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Accidents & Injuries	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Inflation / Price Fluctuation	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

FEBRUARY 2015

- QUESTIONNAIRE (CIVIL) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very High
D. SUPERSTRUCTURE WORKS							
1	Availability of Raw Materials / Construction Materials	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Duration is short / Un realistic	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Accidents & Injuries	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Inflation / Price Fluctuation	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. FINISHING							
1		Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Inflation / Price Fluctuation	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Quality of Material	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

FEBRUARY 2015

- QUESTIONNAIRE (CIVIL) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very High
4	Quality of Workmanship	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Accidents & Injuries	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F. EXTERNAL WORKS							
1	Dependence on external sources <i>Help Text :</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Competency Approval / Work Permits from Competent Authorities <i>Help Text : For Carrying out the work at existing installations.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Accidents & Injuries	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Inflation / Price Fluctuation	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your suggestions please :-

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE
FEBRUARY 2015
- QUESTIONNAIRE (MEP) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	Details	Very Low	Low	Moderate	High	Very
A. GENERAL / CONTRACTUAL MATTERS						
1	Vendor Selection					
	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Vendor Performance and Relationship					
	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)					
4	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>					
	Requirement for No Objection (NOC) / Approvals from Statutory Bodies					
	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE
FEBRUARY 2015
- QUESTIONNAIRE (MEP) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very
B. PROCUREMENT / MANUFACTURING							
1	Delivery of Materials / Equipment / Execution of Work	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Material Handling / Storing	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Sub Vendor Performance and Relationship	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Default of the Sub-Vendor	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE
FEBRUARY 2015
- QUESTIONNAIRE (MEP) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very
C. FABRICATION / INSTALLATION							
1	Duration is short / Un realistic	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Quality of Material	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Quality of Workmanship	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Accidents & Injuries	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Natural Calamity <i>Help Text :</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE
FEBRUARY 2015
- QUESTIONNAIRE (MEP) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Very
D. TESTING & COMMISSIONING							
1	Decision making by Client <i>Help Text : Delayed decisions leads to delay completion of project.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Witness Engineer by Client for Factory Tests / Type Tests / Site Tests	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Failure of Equipment	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Air Quality / Noise Level / Waste around the work place	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Operation & Maintenance during Warranty Period including Training to Client representatives	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your suggestions please :-

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

FEBRUARY 2015

- QUESTIONNAIRE (ELECTRICAL) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction Project in terms of Cost and Time.

SL NO	Details	Very Low	Low	Moderate	High	Very High
A. GENERAL / CONTRACTUAL MATTERS						
1	Vendor Selection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Vendor Performance and Relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Default of the Vendor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Probability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cost Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

FEBRUARY 2015

- QUESTIONNAIRE (ELECTRICAL) -

4	Testing Equipment Availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Quality of Material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Quality of Workmanship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Accidents & Injuries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your suggestions please :-

SURVEY TO IDENTIFY PROBABILITY & IMPACT OF SIGNIFICANT RISK FACTORS IN CONSTRUCTION OF SUBSTATIONS IN UAE

FEBRUARY 2015

- QUESTIONNAIRE (PROJECT MANAGEMENT) -

Please indicate the Probability of Occurrence based on your experience for the following risk factors & their Impact on the Performance of Substation Construction in terms of Cost and Time.

SL NO	RISK FACTOR	Details	Very Low	Low	Moderate	High	Ver
1	Project Charter / Project Management Plan <i>Help Text : Proper Project Charter / Project Mgmt. Plan leads to better Project Outcome.</i>	Probability Cost Impact Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Duration is short / Un realistic	Probability Cost Impact Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Reporting on LESSONS LEARNED & Action Taken	Probability Cost Impact Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	Testing Equipment / Commissioning Spares Availability <i>Help Text : Including provision for additional commissioning spare for any unforeseen failures / Testing Equipments, etc.</i>	Probability Cost Impact Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	Failure of Equipment	Probability Cost Impact Time Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Your suggestions please :-

SURVEY TO ESTIMATE THE % COST ALLOCATION FOR SUPPORT FUNCTIONS IN CONSTRUCTION OF SUBSTATIONS IN UAE

OCTOBER 2015

INDEX

Dear Sir / Madam,

At the outset, I would like to introduce myself as L. Sreenivasan a Research Scholar at University of Petroleum & Energy Studies (UPES) & working with Toshiba Corporation, Transmission & Distribution Division, Abu Dhabi - UAE. This survey is being conducted for a research at the University of Petroleum & Energy Studies, Dehradun - India. The study will help to identify the significant risk factors for estimating Contingency in Construction of substations in UAE.

This survey asks about your perception based on your experience of the % Cost allocation for Support Functions in a Project for the Substation Construction works in UAE.

Your response to this survey, or any individual question on the survey, is completely voluntary. You will not be individually identified and your responses will be used for statistical purposes only.

Name of the Respondent	
Age of the Respondent	
Qualification of the Respondent	
Organization of the Respondent	
Designation of the Respondent	

SL NO	MAJOR SUPPORT FUNCTIONS	% OF COST ON OVERALL PROJECT
1	FINANCE	
2	HR & ADMIN.	
3	HSE & Q	
4	CONTRACTS	
5	DESIGN	
6	PROJECT MANAGEMENT	
7	MATERIALS / CONSTR.	
8	SERVICES (INST./T&C)	
	TOTAL	100%

 SUPPORT FUNCTION / ACTIVITY

 MAIN FUNCTION / ACTIVITY

Res-1	Res-2	Res-3	Res-4	Res-5	Res-6	No. of Y	No. of N	Final Considered	7	12	16	7	12	6	1	6	6	8	CIV-EXT	MEP	
									FIN	HR ADM	HSEQ	CONT	DSGN	CIVIL-GEN	CIV-SI	CIV-PIL SUBST	CIV-SUP STR	CIV-FIN			
Y	Y	Y	Y	Y	Y	4	2	0													
Y	Y	Y	Y	Y	Y	6	0	0													
Y	Y	Y	Y	N	Y	5	1	0													
Y	Y	Y	Y	Y	Y	6	0	2								X					
Y	Y	Y	N	Y	Y	5	1	0													
N	N	N	N	N	N	0	6	0													
Y	Y	Y	Y	Y	Y	6	0	0													
N	N	N	N	N	N	0	6	0													
Y	Y	Y	Y	Y	Y	5	1	0													
Y	Y	Y	Y	N	N	2	4	0													
Y	Y	Y	Y	Y	Y	6	0	0													
N	N	N	N	N	N	0	6	0													
Y	Y	Y	Y	Y	Y	5	1	5	X			X									
N	N	N	N	N	Y	1	5	0													
Y	Y	Y	Y	Y	Y	6	0	4			X							X			
Y	Y	Y	Y	Y	Y	6	0	0													
Y	Y	Y	Y	Y	Y	6	0	0													
Y	Y	Y	Y	Y	Y	6	0	4		X									X		
Res-1	Res-2	Res-3	Res-4	Res-5	Res-6	No. of Y	No. of N	Final Considered	7	12	16	7	12	6	1	6	6	8	CIV-EXT	MEP	
						0	0	1	X												
						0	0	1	X												
						0	0	11		X			X	X		X			X		
						0	0	1		X											
						0	0	1			X										
						0	0	1			X										
						0	0	1			X										
						0	0	6				X									
						0	0	3					X								

APPENDIX A5

LIST OF RISK VARIABLES FOR QUESTIONNAIRE-1

CATEGORY	SEQ.	RISK VARIABLE
FINANCE	1	Budgeting of Project
	2	Invoicing by Contractor to Client <i>Help Text : Time taken for submission of Invoice / its correctness / non-invoicing</i>
	3	Cash In Flow [i.e. Liquidity] <i>Help Text : Advance / Progress / Retention Payments from Client</i>
	4	Inflation / Price Fluctuation
	5	High Interest Rate
	6	Exchange Rate Fluctuation
	7	Delay Penalty / Assessment of Penalty by Client
	8	Acceptance of Work by Client / Consultant <i>Help Text :: Duration for receiving Provisional Acceptance / Final Acceptance of the Project</i>
	9	Periodic Audits <i>Help Text : Internal / External Audits</i>
HR / ADMIN	1	Laws and Regulations and the changes during the tenure of the contract
	2	Requirement for No Objection (NOC) / Approvals from Statutory Bodies
	3	Cultural Impact / Personality Impact / Language Impact
	4	Employee Turnover & Availability of Skilled Personnel <i>Help Text : Resignation / Termination</i>
	5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>
	6	Resources Deployment <i>Help Text : Timely deployment with proper skill set enables timely completion of project.</i>
	7	Productivity of Human Resources <i>Help Text : Motivation will lead to enhanced Morale; leading to better productivity.</i>
	8	Utilization of Resources <i>Help Text : Role Clarity & Appropriate Assignment enhances resources utilization.</i>
	9	LEADERSHIP qualities of Key personal <i>Help Text : Such as Decision Making / Responsibility / Unethical Acts / Behaviour.</i>
	10	Resistance to change by Team Members <i>Help Text : Non acceptance of assigned role due to possession of different skill set / experience.</i>
	11	Appropriate Training & Development of Skill Set
	12	Conflict among Stakeholders <i>Help Text : Stakeholders are Team Members, Clients, Consultants, Subcontractors, Vendors, etc.</i>
	13	Extreme Weather condition (Heat) / Working Hours during Summer
	14	Natural Calamity <i>Help Text : Such as Flood / Rain / Fog / Sand Storm / Fire / Earthquake</i>

APPENDIX A5

LIST OF RISK VARIABLES FOR QUESTIONNAIRE-1

CATEGORY	SEQ.	RISK VARIABLE
HSEQ	1	Extreme Weather condition (Heat) / Working Hours during Summer
	2	Natural Calamity <i>Help Text : Such as Flood / Rain / Fog / Sand Storm / Fire / Earthquake</i>
	3	Geo-Technical conditions <i>Help Text : Such as Loose Soil, Water logging, Underground surface, etc.</i>
	4	Chemical Pollution / Air Quality / Noise Level / Waste / Hazrdous materials around the work place
	5	Laws and Regulations and the changes during the tenure of the contract
	6	HSE Plan at site, Induction of Site team, Awaraness Program, Training & Safety Signs.
	7	Inspection & Audits, Housekeeping & Control, Risk Assessment & Method Statements
	8	Competency Approval / Work Permits from Competent Authorities <i>Help Text : For Carrying out the work at existing installations.</i>
	9	Supervision of Work
	10	Shutdown for carrying out Modification / Tie-in <i>Help Text : Time frame for carrying out the work due to danger of impacts to existing installations.</i>
	11	Incidents / Serious Inuries / Fatalities / Emergency Evacuation & Rescue Plans / Safety Drills
	12	Theft & Vandalism
	13	Warranty requirements <i>Help Text : Extended Warranties / Additional Warranties</i>
	14	Project Proximity (Location and Accessibility) <i>Help Text : Location and Accessibility along with availability of First Aid / Hospitals</i>
	15	Periodic Medical Checks / Physical Exercise / Fitness
	16	Quality Management System
	17	Quality of Material
	18	Quality of Workmanship
	19	Material Handling / Storing
	20	Damage to Structure / Equipment
CONTRACTS	1	Variation to the Contract <i>Help Text : Additions and / or Deletions to the Scope of Work. Changes to Contract Conditions.</i>
	2	Suspension of Work by Client
	3	Acceptance of Work by Client / Consultant <i>Help Text :: Duration for receiving Provisional Acceptance / Final Acceptance of the Project</i>
	4	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)
	5	Delivery of Materials / Equipment / Execution of Work
	6	Vendor Performance and Relationship
	7	Default of the Vendor
	8	Accidents & Injuries <i>Help Text : Insurances and Claims.</i>

APPENDIX A5

LIST OF RISK VARIABLES FOR QUESTIONNAIRE-1

CATEGORY	SEQ.	RISK VARIABLE
DSGN	1	Laws and Regulations and the changes during the tenure of the contract
	2	Requirement for No Objection (NOC) / Approvals from Statutory Bodies
	3	Site Level & Access road confirmation
	4	Geo-Technical conditions <i>Help Text : Such as Loose Soil, Water logging, Underground surface, etc.</i>
	5	Input from Client / Consultant / Other Contractors <i>Help Text : Timely receipt of inputs helps project completion on time.</i>
	6	Provision of Interfaces details by Client / Consultant for Tie-ins <i>Help Text : Timely receipt of interface details leads to better project coordination.</i>
	7	Preparation of Design Documents <i>Help Text : Time for preparation, its schedule including the necessary inter-team coordination.</i>
	8	Approval of Design Documents
	9	Decision making by Client <i>Help Text : Delayed decisions leads to delay completion of project.</i>
	10	Duration is short / Un realistic
	11	Details in Design Documents
	12	Competence of Design Engineer
	13	Quality of Workmanship
	14	Employee Turnover & Availability of Skilled Personnel <i>Help Text : Resignation / Termination</i>
	15	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>
CIVIL - Gen	1.1	Vendor Selection
	1.2	Vendor Performance and Relationship
	1.3	Default of the Vendor
	1.4	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)
	1.5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>
	1.6	Natural Calamity <i>Help Text : Such as Flood / Rain / Fog / Sand Storm / Fire / Earthquake</i>
	1.7	Laws and Regulations and the changes during the tenure of the contract
	1.8	Requirement for No Objection (NOC) / Approvals from Statutory Bodies
CIVIL - Soil Inv	2.1	Input from Client / Consultant / Other Contractors <i>Help Text : Timely receipt of inputs helps project completion on time.</i>
	2.2	Site Level & Access road confirmation

APPENDIX A5

LIST OF RISK VARIABLES FOR QUESTIONNAIRE-1

CATEGORY	SEQ.	RISK VARIABLE
CIVIL - Piling	3.1	Requirement for Building Permits / Civil Defence Approvals
	3.2	Site Level & Access road confirmation
	3.3	Geo-Technical conditions <i>Help Text : Such as Loose Soil, Water logging, Underground surface, etc.</i>
	3.4	Duration is short / Un realistic
	3.5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>
	3.6	Quality of Workmanship
	3.7	Accidents & Injuries
	3.8	Inflation / Price Fluctuation
Civil - Super stru	4.1	Availability of Raw Materials / Construction Materials
	4.2	Duration is short / Un realistic
	4.3	Extreme Weather condition (Heat) / Working Hours during Summer
	4.4	Quality of Workmanship
	4.5	Accidents & Injuries
	4.6	Inflation / Price Fluctuation
Civil - Finishing	5.1	Duration is short / Un realistic
	5.2	Availability of Raw Materials / Construction Materials
	5.3	Inflation / Price Fluctuation
	5.4	Quality of Material
	5.5	Quality of Workmanship
	5.6	Accidents & Injuries
	5.7	Material Handling / Storing
	5.8	Air Quality / Noise Level / Waste around the work place
Civil - External	6.1	Input from Client / Consultant / Other Contractors <i>Help Text : Timely receipt of inputs helps project completion on time.</i>
	6.2	Competency Approval / Work Permits from Competent Authorities <i>Help Text : For Carrying out the work at existing installations.</i>
	6.3	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>
	6.4	Quality of Workmanship
	6.5	Extreme Weather condition (Heat) / Working Hours during Summer
	6.6	Accidents & Injuries
	6.7	Inflation / Price Fluctuation
MEP - General	1.1	Vendor Selection
	1.2	Vendor Performance and Relationship
	1.3	Default of the Vendor
	1.4	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)
	1.5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>
	1.6	Natural Calamity <i>Help Text : Such as Flood / Rain / Fog / Sand Storm / Fire / Earthquake</i>
	1.7	Laws and Regulations and the changes during the tenure of the contract
	1.8	Requirement for No Objection (NOC) / Approvals from Statutory Bodies

APPENDIX A5

LIST OF RISK VARIABLES FOR QUESTIONNAIRE-1

CATEGORY	SEQ.	RISK VARIABLE
MEP - Proc / Mfg	2.1	Requirement for Civil Defence Approvals
	2.2	Delivery of Materials / Equipment / Execution of Work
	2.3	Material Handling / Storing
	2.4	Sub Vendor Performance and Relationship
	2.5	Default of the Sub-Vendor
	2.6	Claims / Variation / Litigation by Supplier / Subcontractor (SubVendors)
MEP - Fab / Inst	3.1	Duration is short / Un realistic
	3.2	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>
	3.3	Material Handling / Storing
	3.4	Quality of Material
	3.5	Quality of Workmanship
	3.6	Accidents & Injuries
	3.7	Natural Calamity <i>Help Text : Such as Flood / Rain / Fog / Sand Storm / Fire / Earthquake</i>
MEP - Testing	4.1	Decision making by Client <i>Help Text : Delayed decisions leads to delay completion of project.</i>
	4.2	Witness Engineer by Client for Factory Tests / Type Tests / Site Tests
	4.3	Failure of Equipment
	4.4	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>
	4.5	Air Quality / Noise Level / Waste around the work place
	4.6	Operation & Maintenance during Warranty Period including Training to Client representatives
	4.7	Accidents & Injuries
ELEC - General	1.1	Vendor Selection
	1.2	Vendor Performance and Relationship
	1.3	Default of the Vendor
	1.4	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)
	1.5	Dependence on external sources <i>Help Text : Hiring of Resources from manpower supply agencies, etc.</i>
ELEC - Proc / Mfg	2.1	Exchange Rate Fluctuation
	2.2	Material Handling / Storing
	2.3	Delivery of Materials / Equipment
	2.4	Vendor Performance and Relationship
	2.5	Claims / Variation / Litigation by Supplier / Subcontractor (Vendors)
	2.6	Default of the Vendor