

POWER GRID COMPANY OF BANGLADESH LTD.

REVISION HISTORY

REVISION DETAILS				REVISION STATUS	
SL. #	Referred Section	Revision.	Change Details	Date of Amendment	Approval
1	QP-DGN-1, Section 1.1, 1.2	01	Insert " QF-DGN- 02 " in respective output column.	15/09/13	
2	QP-DGN-1, Section 1.10.1.1, 1.10.3.10	01	Insert " QF-DGN- 03, 04, 05 " in respective output column.	15/09/13	
3	QP-DGN-1, Section 1.10.2.2, 1.10.3.2	01	Insert " QF-DGN-03, 04 " in respective output column.	15/09/13	
4	QP-DGN-1, Section 1.10.2.8	01	Insert " QF-DGN-05" in respective output column.	15/09/13	
5	QP-DGN-1, Section 2.3	01	Insert " QF-DGN-01" in respective output column.	15/09/13	

Reviewed by (MR):



Approved by (MD)



Quality Management System	POWER GRID COMPANY OF BANGLADESH LTD.					QUALITY PROCEDURES			
	TITLE: PROCEDURE FOR DESIGN CONTROL								
Document No:	QP-DGN-1	Revision No.:	01	Effective Date:	15/09/13	Page:	1	of	8

1. Scope: Applies to whole of POWER GRID COMPANY OF BANGLADESH LTD.

2. Purpose: To plan and carryout construction, repair & maintenance under controlled conditions.

SI No.	Activity (including Check Points)	Ref. Doc.	Responsibility	Freq. / Time	Output
1.0	Bidding process for procurement of equipment/spares, construction of new projects, appointment of Consultant				
1.1	Bid document is prepared as per PPR/Donor Agency's Guidelines/PGCB policies.	Respective DPP, PPR and Donor Agency's Guidelines	DGMDGN	As per requirement	QF DGN-02
1.2	In some cases, Consultant is engaged to prepare the Bidding Document	Respective DPP, PPR and Donor Agency's Guidelines	DGMDGN	As per requirement	QF DGN-02
1.3	Following items are taken up for consideration for preparing bidding document: - Requirement of Consultants/existing substation & line/ projects - Finalizing the scope of work/ Terms of Reference - Preparation of technical specification & drawing as per requirements as applicable - Finalization of quantity of required equipment/materials/services - Finalization of Bidder's/Consultant's/Manufacturer's qualification - Finalization of Completion Time - Finalization of Amount of Bid Security as applicable - Finalization of Type of Bidding (i.e. Two/Single envelope, Double/Single stage etc.)	Respective DPP, Sample Bidding Documents of PPR/Donor Agencies	DGMDGN	As per requirement	Draft Bidding Document
1.4	Approval of Bidding Document by the competent authority	D(P&D)/MD/Board	CS	Once per Bidding Document	Approved Bidding Document
1.5	Invitation for Bidding/Request for Proposal is published in daily newspapers/website as per guidelines	PPR and Donor Agency's Guidelines	CS	PPR and Donor Agency's Guidelines	
1.6	Bid documents are sold to Prospective firms (as outlined in Invitation for Bidding)		CS		
1.7	Queries are received from Prospective Bidders and necessary explanation are given to them		CS/DGMDGN		
1.8	Pre-Bid Meeting is held (as per provision of bidding document)	Respective Bidding Document	CS	As per provision of Bidding Document	
1.9	Addendum/Clarifications to the Bidding Document, as per requirements, are issued		CS	As per requirement	

Reviewed by (GMP&D):

Approved by (Dir(P&D)):

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SI No.	Activity (including Check Points)	Ref. Doc.	Responsibility	Freq. / Time	Output
1.10	Bids are received as per Deadline mentioned in the Bid Document with Addendum/ Corrigendum	Bidding Document	CS	Once	
1.10.1	<i>For single envelop, single stage bidding system, price proposals & technical proposals are opened simultaneously by the following Tender Opening Committee (TOC): Project Director, DGM (Design), DGM (Finance), DGM (Procurement).</i>		TOC		
1.10.1.1	Evaluation of Bid by the TEC as per provisions of bidding document and PPR/Donor Agency's Guidelines. There are three(3) TEC approved by PGCB Board. Each of the TEC headed by one GM and respective Project Director or DGMDGN (if no PD is assigned) is the member secretary of TEC. Out of three, one TEC will be assigned by MD. DGMDGN & his Office/Consultant (if any) does the detailed scrutiny of the Bids and prepare report for TEC. If required and recommended by TEC clarification to the Bidders to be issued and corresponding reply of Bidders shall be received by CS.	Bidding Document and PPR/Donor Agency's Guidelines	TEC		QF DGN-03, 04, 05
1.10.1.2	TEC meeting is called to finalize the Evaluation Report of Bid Proposals.		Convener /Member Secretary of TEC		Evaluation Report of Bid Proposal
1.10.1.3	The Evaluation Report of Bid proposal is presented for approval to MD/PGCB Board.		Convener of TEC/Dir(P&D)		
1.10.1.4	MD/the Board approves the Evaluation Report of Bid proposal. The evaluation report is sent to Donor Agency for approval in case of projects financed by Donor agencies.		MD/Board/ Donor Agency		Approval of the Report
1.10.1.5	If the project is financed by PGCB, Notification of Award of Contract is issued as per approval of MD/Board; otherwise Notification of Award of Contract is issued as per approval of Donor Agency.		CS		Award of Contract
1.10.1.6	Acceptance of Notification of Award of Contract is received from the bidder to whom the notification of award of Contract was issued.		CS		
1.10.1.7	Draft Contract Document is then vetted by Ministry of Commerce, Ministry of Law, National Board of Revenue (NBR) and PGCB's legal advisor as required.				
1.10.1.8	Signing of Contract and preparation of signed and bound Contract Document.		CS / DGMDGN / PD		Contract Document

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1.10.2	For double envelop, single stage bidding system, only technical proposals are opened by the TOC as stated in 1.10.1.				
1.10.2.1	Unopened Price Proposals, submitted by the bidders, are stored in the safe custody of PGCB.	Bidding Document	CS / DGMDGN / PD	Once	
1.10.2.2	Evaluation of Technical Proposals by the TEC of PGCB as per provisions of bidding document and PPR/Donor Agency's Guidelines as stated in 1.10.1.1	Bidding Document and PPR/Donor Agency's Guidelines	Tender Evaluation Committee		QF DGN-03, 04,
1.10.2.3	TEC meeting is called to finalize the Evaluation Report of Technical Proposals.		Convener of TEC / Member Sec. of TEC		Evaluation Report of Technical Proposal
1.10.2.4	The Evaluation Report of Technical proposal is presented for approval to MD/PGCB Board.		Member Sec. of TEC/ Dir(P&D)		
1.10.2.5	MD/the Board approves the Evaluation Report of Technical proposal. The evaluation report of technical proposal is sent to Donor Agency for approval in case of projects financed by Donor agencies.		MD/Board/ Donor Agency		Approval of the Report
1.10.2.6	If the project is financed by PGCB, Notification of opening of Price Proposal is issued as per MD/Board's approval; otherwise Notification of opening of Price Proposal is issued as per approval of Donor Agency.		CS		
1.10.2.7	Price proposals are opened as per recommendation of TEC given in the Technical Evaluation Report and as per approval of MD/ Board/Donor Agency as stated in 1.10.1	Evaluation Report of Technical Proposal	TOC	Once	
1.10.2.8	Evaluation of Price Proposals by the Tender Evaluation Committee (TEC) of PGCB as per provisions of bidding document and PPR/Donor Agency's Guidelines as stated in 1.10.1.1	Bidding Document and PPR/Donor Agency's Guidelines	TEC		QF DGN-05
1.10.2.9	TEC meeting is called to finalize the Evaluation Report of Price Proposals.		Convener of TEC / Member Sec. of TEC		Evaluation Report of Price Proposal
1.10.2.10	The Evaluation Report of Price proposal is presented for approval to MD/PGCB Board.		Member Sec. of TEC/ Dir(P&D)		
1.10.2.11	MD/the Board approves the Evaluation Report of Price proposal. The evaluation report of price proposal is sent to Donor Agency for approval in case of projects financed by Donor agencies.		MD/Board/ Donor Agency		Approval of the Report

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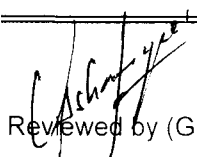
SI No.	Activity (including Check Points)	Ref. Doc.	Responsibility	Freq. / Time	Output
1.10.2.12	If the project is financed by PGCB, Notification of Award of Contract is issued as per MD/Board's approval; otherwise Notification of Award of Contract is issued as per approval of Donor Agency. Then the item nos. 1.10.1.6 to 1.10.1.8 as mentioned above are followed.		CS		Award of Contract
1.10.3	<i>For two stage bidding procedure, only Pre-qualification proposals are opened.</i>				
1.10.3.1 Deleted	Unopened Price proposals, submitted by the bidders, are stored in the safe custody of PGCB.	Bidding Document	CS	Once	Not Applicable
1.10.3.2	Evaluation of Pre-qualification Proposals by the Tender Evaluation Committee (TEC) of PGCB as per provisions of bidding document and PPR/Donor Agency's Guidelines.	Bidding Document and PPR/Donor Agency's Guidelines	TEC		QF DGN-03, 04
1.10.3.3	TEC meeting is called to finalize the Evaluation Report of Pre-qualification Proposals.		Convener of TEC/ Member Sec.		Evaluation of the basic Technical Proposal
1.10.3.4	The bidders are requested to clarify their pre-qualification proposals if needed and reply from the bidders shall be received for further evaluation.		TEC		
1.10.3.5	Evaluation of Pre-qualification Proposals based on basic proposal and reply against clarification sought by the Tender Evaluation Committee (TEC) of PGCB as per provisions of bidding document and PPR/Donor Agency's Guidelines.	Bidding Document and PPR/Donor Agency's Guidelines	TEC/ Member Sec.		
1.10.3.6	TEC meeting is called to finalize the Evaluation Report of Pre-qualification Proposals. In case of Engineering service short listing of the pre-qualified firms shall be finalized as per provisions of bidding document and PPR/Donor Agency's Guidelines.		Convener of TEC		Evaluation of Technical Proposal
1.10.3.7	The Evaluation Report of Pre-qualification proposal/short list is presented for approval to MD/ PGCB Board.		Member Sec. of TEC/ Dir(P&D)		
1.10.3.8	MD/the Board approves the Evaluation Report of Pre-qualification proposal/short list. The Evaluation of Pre-qualification proposals/short list is sent to Donor Agency for approval in case of projects financed by Donor agencies.		MD/Board/ Donor Agency		Approval of the Report
1.10.3.9	Request for Proposal(RFP) shall be issued to the pre-qualified/short listed Firms.		CS		


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1.10.3.10	RFP are received and opened as per recommendation of TEC given in the Pre-qualification Evaluation Report and as per approval of MD/ Board/Donor Agency. Then the item nos. 1.10.2.8 to 1.10.2.12 as mentioned above are followed.	Evaluation Report of Technical Proposal	TOC/TEC	Once	QF DGN-03, 04, 05
2.0	Design works in the execution stage of the project.				
2.1	Site visits are undertaken when necessary by the person designated by DGMDGN & report to the DGMDGN/ concern Manager		DGMDGN	As required	Reaching solution for specific problem
2.2	Contractor/Supplier submits the drawing/ documents for approval. The drawings/documents are then examined for compliance with the requirements of Contract Specifications and Applicable Standards.	Respective Contract Document	DGMDGN	As stipulated in the Contract	Contractor's/ Supplier's drawing/documents
2.3	The drawing/documents are approved or Approved subject to comment(s) or Returned with comment(s) after checking by the Design office as per Contract Specifications and Applicable Standards. In some projects Consultant is appointed to assist DGM (Design) by checking the design/specifications and providing comments.	Respective Contract Document	DGMDGN	As required	From No. QF- DGN 01
2.4	Total three (04) sets of the drawing/ documents are approved, one (01) set is to be kept in Design office, one set is to be sent back to the Project Office, one set is to be forwarded to Consultant (if Consultant is available) and another set is to be forwarded to the Contractor/Supplier.	Respective Contract Document	DGMDGN	As required	Approved Drawing/Documents
2.5	Factory acceptance tests are witnessed by persons designated by MD and the report is to be submitted to GM(P&D) through PD.	Respective Contract Document	Designated persons/ DGMDGN/PD	As required	Report
2.6	Contractor/Supplier submits the Factory Routine Test report for approval. The Factory Routine Test report are then examined for compliance with the requirements of approved Specifications/drawings and Applicable Standards.		DGMDGN		
2.7	After approval of the FAT report and Factory Routine Test report Dispatch Clearance of the materials is to be issued by DGMDGN/PD		DGMDGN/PD		


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2.8	Post Landing Inspection(PLI) is to be carried out after arrival of the material at site by the committee for PLI: Manager (Project), Manager(Design), Manager(GMD)		PD		
2.9	The Contractor/Supplier submits the "As-built" drawing and "Operation & Maintenance Manual" after the completion of the project work.	Respective Contract Document	Project Director	Once per contract	"As-built" drawing and Operation & Maintenance manual
2.10	Submitted "As-built" drawing is compared with approved drawings/documents and final approval is given for the "As-built" drawings/documents.	Approved Drawing/Document	DGMDGN	Once per contract	"As-built" drawing and Operation & Maintenance manual
3.0	Grid Maintenance Related Works done by Design office.				
3.1	Request for providing solutions for different problems are received from Grid Maintenance Division and Project Divisions.		DGMDGN		
3.2	Site visits are undertaken where necessary by engineers designated by DGMDGN.	Ref. to 3.1	Designated Engineers	As required	Identifying the specific problem
3.3	Solutions are proposed and necessary actions advised.		DGMDGN	As required	
4.0	Design Process.				
4.1	Works undertaken by Design office include i) Structural & Foundation design of buildings, Transmission Tower, Substation Gantry/Equipment support ii) Transmission Line Design iii) Substation Design (Layout/Single Line/Control & Protect scheme design/Auxiliary power/Earthing mesh/ Lightning protection etc.) required for Projects and Grid Maintenance Division. Different steps are given below:	Bangladesh National Building Code/ IEC/IEEE standards	DGMDGN	As required	

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SI No.	Activity (including Check Points)	Ref. Doc.	Responsibility	Freq. / Time	Output
4.1.1	<p>Planning: Design of any type of Transmission Line/Substation/Tower/Gantry Structure/building (architectural/structural)/civil foundation required for PGCB is done by using the software tools like AutoCAD/STAAD Pro/PLSCAD or any other. The design stages which are followed is given below:</p> <ul style="list-style-type: none"> - Determination of input as per requirement. - The software generates the output according to input. - Design process is reviewed at input, output, verification and validation stages. - Overall design process is carried out under the supervision of DGMDGN. 		DGMDGN		
4.1.2	<p>Input: The design input requirements are given below:</p> <ul style="list-style-type: none"> - Functional & performance requirement of the Transmission line/Substation/Building. - Input requirements are followed according to Bangladesh National Building Code-1993 /IEC/IEEE or any other. - Information data etc, if available for similar projects in previous design is taken into account. - Requirements applicable for the Transmission line/Substation/Building as per national/local authorities. The input for the design includes geometry data, clearance data, load data(mechanical/electrical), load combination, material properties, reinforcement details. During the identification, input requirement shall be checked whether there is any conflict with each other. 		DGMDGN		

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4.1.3	Output: The output of the design are met as per software to: <ul style="list-style-type: none"> - Meet the input requirements. - Bill of materials - Reference for building/tower/Transmission line route/substation layout acceptance criteria. - Drawings for the building/tower/Transmission line route/tower plotting/substation layout/substation SLD/Control&Protion scheme - The output includes data on geometry, stability, reinforcement details & calculation, mechanical & electrical loading calculation/ short circuit force calculation. 	Input data	DGMDGN		As specified
4.1.4	Review: The design process will be reviewed at stages of <ul style="list-style-type: none"> - Determination of input requirements. - Preliminary design output & calculations. The review is done to evaluate the ability of design results, to meet the requirements. to identity any problem and to propose necessary actions. The review is done by the DGMDGN.		DGMDGN		Review records
4.1.5	Verification: Verification of design is performed to ensure that the design outputs at preliminary stage have met the design requirements.		DGMDGN		
4.1.6	Validation: Validation of the design is performed whenever possible by the software.		DGMDGN		
4.1.7	Control: Any changes in design process stages is identified and controlled. The changes in the design must be approved by DGMDGN and records are maintained.		DGMDGN		Records whenever required
5.0	The effectiveness of this procedure is reviewed and evaluated. Internal audit will also check this effectiveness.		DGMDGN GMP&D	At least once a year	Review of system
5.1	Actions will be taken to improve the system on the basis of review		GMP&D, DGMDGN, MR	As required	Improvement

Reviewed by (GMP&D):

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