

DAKSHIN/UTTAR HARYANA BIJLI VITRAN NIGAM



QUALITY ASSURANCE PLAN

TABLE OF CONTENTS

Sr No	Description	Page No
1.	Sources of material	3
2.	Material Quality Assurance	3
2.1.	Submission of Quality Assurance Procedure	4
2.2.	Inspection Call Raised by vendor / contractor	4
2.3.	Inspection Requisition to Inspecting Officer / Third Party Agency	5
2.4.	Material Inspection at the firm's premises	6
2.5.	Sealing Procedure for the inspected material	7
2.6.	Dispatch Instructions	7
2.7.	Acceptance of material at the stores	8
3.	Material Inspection at DHBVN/UHBVN stores for Nigam Purchase	8
4.	Material Inspection at Contractor stores for Turnkey Contracts	9
4.1.	Verification of material at stores by Joint Verification Committee	9
4.2.	Team of XENs	10
5.	Workmanship and measurements of erected material	10
5.1.	Checking during erection phase	10
5.2.	Team of XENs	10
5.3.	Taking over	10
6.	Delivery and Payment Schedule	11
	ANNEXURE – I	12
	ANNEXURE – II	13
	ANNEXURE – III	15
	ANNEXURE – IV	17
	ANNEXURE – V	18

1. Sources of Material

DHBVN/UHBVN undertakes material procurement through various media as per its requirement to execute various projects. The pre-dispatch and post-dispatch quality inspections for the following three major categories are required:-

- | | |
|--|-------------------|
| a) Material directly procured by Nigam | : MM Department |
| b) Material procured under the turnkey contracts | : PD&C Department |
| c) Material procured under turnkey contracts | : Field Offices |

Apart from pre-dispatch quality inspection, the measurement and workmanship of erected material is also essential in the following cases:-

- 1) Turnkey execution of the contract by PD&C and field offices
- 2) Work executed departmentally
- 3) Work got executed by prospective consumers through private contractors

The Material is required to be inspected under all the three heads as mentioned above to ensure proper quality. The material shall be inspected as per the provisions of relevant IS/IEC and specifications of the Nigam which should necessarily be referred to during inspection and it shall be ensured that the test results are in accordance with the Standards/Specifications.

Hereunder, a process flow is laid down for inspection of the material being procured by the Nigam to ensure effective quality checks.

Large number of items required for day to day maintenance of Low Distribution system (not enlisted against centrally procured items) are being procured locally by field offices as per provision in Delegation of Power (DOP). Since these items are procured in smaller numbers at a time, (though the total quantity becomes sizeable) as such it become necessary to procure these items on central level as there is no proper procedure to check & ensure the price & quality of the material. It would be appropriate that items of regular use required in sizeable quantity may be procured by MM for the entire utility.

2. Material Quality Assurance

This includes the material which is:

- Procured directly by the Nigam through MM department.
- Supplied to the Nigam under turnkey contracts i.e. supply, erection and commissioning of new 33kV sub-stations, replacement of defective equipments,

bifurcation of feeders, erection of new LD system, release of tubewell connections or any other project etc. These projects are mainly dealt by PD&C department in DHBVN/UHBVN and also by field offices.

2.1. Submission of Quality Assurance Procedure

The Vendor / Contractor at the time of submission of the drawings for approval from DHBVN/UHBVN is also required to submit a Quality Assurance Procedure (QAP) of the materials to be supplied for review and approval. In this QAP, the vendor / contractor shall clearly indicate the quality measures being taken by the manufacturer to maintain the quality of the finished product. The drawings/QAP once approved shall not be required to be submitted for approval again.

QAP will indicate the following details:-

- i) Tests being performed on the raw material purchased by manufacturer for manufacturing of the finished product.
- ii) Tests being conducted during manufacturing of the product (In process testing).
- iii) Tests which shall be done on the finished product at the time of pre-dispatch inspection.
- iv) Test results assured by the vendor.
- v) Tests procedure followed for the inspection with full details of test setup etc.

The Inspection shall be carried out on the basis of the approved QAP. All the details provided by the vendor / contractor shall be verified by Nigam / Third Party during the inspection and if any deviation is found from the approved documents, it will be noted in the inspection report.

2.2. Inspection call raised by Vendor / Contractor

The vendor / contractor will give inspection call notice 20 days in advance of date of readiness of material or as provided in the NIT to the below mentioned agencies:

1. For Work Orders issued by PD&C : CGM / PD&C
2. For Purchase Order issued by MM : CGM / MM
3. For work order issued by Field offices : SE/OP (Concerned)/Const.

The Inspection call will be generated in a pre-defined format as per Annexure – I.

The vendor / contractor shall also provide a copy of approved QAP, drawings along with the inspection call. Vendor / contractor should give it in writing that he is ready for the inspection and in case of any default on his part, appropriate action in form of penalty will be taken by DHBVN/UHBVN.

2.3. Inspection Requisition to Inspecting Officer / third party agency

After the Inspection call is received by the concerned department, the department shall depute inspecting Officer from DHBVN/UHBVN / third party for inspection of the said item within stipulated time frame as below :-

- | | | | |
|---|--|---|---|
| 1 | PD&C Department | : | Within 2 working days of receipt of Inspection Call from the Vendor / Contractor |
| 2 | MM Department | : | Within 5 working days from date of receipt of Inspection Call |
| | For material within Contract Delivery Period (CDP) | : | Within 5 working days from date of receipt of Inspection Call |
| 3 | For material beyond CDP | : | Within 7 working days from date of (i.e. for delayed delivery) receipt of Inspection Call |
| 4 | Field Offices | : | Within 2 working days of receipt of Inspection Call from Vendor / Contractor |

The Inspection requisition shall be provided in the format as per Annexure – II.

The Inspecting officer/agency shall be provided with all the relevant documents like QAP, Drawings, Minutes of Meetings of previous Inspection etc. before the inspection for preparation.

The nomination of inspecting officer would be delegated to CGM(PD&C) / CGM(MM) / SE(OP). The following norms shall be applicable for the nomination of inspecting officer deputed for the inspection of material.

- Material worth upto and including Rs. 30 Lacs : DHBVN/UHBVN officer
- Material irrespective of cost . : Third party agency such as QSS, QUEST Shanthala Power

Note:-

In case of T/Fs & electronics meters :Joint inspection of 3rd party and Nigams officer/s

The Third Party Agency will be nominated by WTDs at their level irrespective of cost payable to the inspecting agency.

The Inspecting Officer will be deputed in rotation for which a separate register will be maintained in the office of CGM(PD&C) / CGM(MM) / SE(OP)/Const. Any deviation from the above will be with the approval of Director (Projects). Duty once assigned will not be changed under any circumstances.

It is the duty of the Inspecting officer to prepare himself for the inspection. The inspector shall be well conversant with the relevant Standards, Specifications, Test methods, test results etc before going for the inspection.

2.4. Material Inspection at the firm's premises

The Inspector shall carry out the inspection at the works of the vendor as per the approved QAP and the progress of the same shall be apprised to the Head of the Department on regular basis. The instructions for the inspecting officers for conducting inspection at the vendor's works are as follows:-

- Inspecting Officer/agency shall contact the firm's representative/s responsible for testing and inform him the time of visit for the inspection by mail. A copy of the mail shall be given to HOD of concerned department for reference and record.
- Inspecting officer(s) will report their arrival at & departure from firm's premises through landline phone to HOD of Inspection Requisition (IR) Agency.
- As soon as the Inspecting Officer reaches the firm's premises for inspection, he shall ask for the list of the materials being offered for inspection.
- In case of change in the quantity from the quantity indicated in the Inspection Call / Requisition, a variation of maximum +20% shall be allowed and the inspecting officer(s) will inform the HOD, about the quantity offered and obtain telephonic approval to be confirmed in writing, later.
- Have a casual round of the premises to cross check the quantity indicated in the Inspection Requisition (IR) or offered for inspection.
- Only ready material to be accepted for testing.
- Randomly tick mark on the packing list to draw the samples as per the sampling procedure indicated in the relevant Indian Standard.
- Append signature on samples with permanent ink marker.
- Obtain copies of raw material / in process tests carried out by the firm as per the QAP. Verify the results as indicated in the QAP.
- Check calibration certificates of testing instruments.
- Check validity of BIS license, wherever applicable.
- Test check the testing instruments.

- The entire inspection procedure shall be videographed. The video shall clearly show the quantity offered for inspection, sample selection & tests carried out.
- Follow the IS & technical specifications for conducting acceptance tests on samples.
- All the tests must be witnessed personally by the Inspecting Officer. The Test results shall be noted down separately by the Inspecting Officer. The test results indicated in the final test reports shall be cross-checked with the noted values available with the Inspecting Officer.
- The copies of the inspection report may be mailed to the IR Agency from the firm's premises itself before leaving the premises.
- Hard copy of Inspection report may be submitted on the next date positively.

2.5. Sealing Procedure for the inspected material

Before the officer leaves for the inspection, the concerned department shall provide seals to the officer required for material to be inspected. A proper record shall be maintained by the concerned department regarding the details of seals issued to the concerned inspecting engineer.

Once the material clears all the acceptance tests as per specifications, it shall be effectively sealed with seals provided by Nigam and the details of seals affixed may be clearly indicated in the inspection report. The seals shall be provided on the material in such fashion that these do not get damaged / defective during transportation, loading & unloading. Where it is not possible to affix Polycarbonate seals, digitally signed paper seals be affixed duly covered and protected with cellular tape.

Procedure for sealing arrangement for major equipments is under process and shall be approved by WTDs separately.

In case of inspection being conducted by 3rd part agency, polycarbonate seals shall be issued to them as per requirement (in lump –sum on monthly basis)

2.6. Dispatch Instructions

The Inspection Requisition (IR) agency will issue dispatch instructions within maximum two days of receipt of inspection report. Simultaneously, copies of the inspection report may be mailed to consignees.

The IR agency will monitor to ensure that the material inspected is dispatched within reasonable time after the issue of dispatch instructions to crosscheck fake inspection, if any. Delay in dispatch, if any, has to be justified with reasons.

2.7. Acceptance of material at the stores

As soon as the material is received, the Store Incharge shall verify the seal numbers provided against the items as listed in the inspection report. In case of any discrepancy in the seal numbers, the same shall be brought to notice of Inspection Requisition Agency. The store incharge will also carry out the physical checking of material for various parameters and in case of any observation, report the matter to Requisition Agency.

The material found with seal numbers not matching with the list or observed doubtful in physical parameters shall not be taken on books for issue to the field offices.

3. Material Inspection at DHBVN/UHBVN stores for Nigam Purchase

Checking of material received at DHBVN/UHBVN store shall be carried out as under:

- a) A team of 2 XENs to be nominated by CGM/MM will carry out random checking to ensure quality and quantity of material received in Nigam's stores.
- b) The team will draw sample from each lot received in anyone of the stores to carry out checking as under:-
 - Genuineness of seals provided during inspection
 - Workmanship of material received in store
 - Quantity of material inspected viz-a-viz received quantity.
 - Quality of material received in the store
- c) The above said inspection / checking would be carried out to check all physical parameters as per approved technical specifications of the Nigam / Engineering Design / Drawings.
- d) The above said team would also draw samples randomly for any material for its testing from any NABL accredited testing lab as approved by the Nigam.
- e) A committee of two XENs to be constituted by Director/Projects at random may also draw sample from any lot for cross checking as per (b) & (d) above.
- f) The material received at the store shall not be issued to field offices before the test reports from NABL accredited lab is received by DHBVN/UHBVN. However, in case of any urgency to issue material in the field, an undertaking may be obtained from the Vendor stating that in case the material fails in the NABL Lab, the cost of replacement of material including its erection and dismantling at site, transport of material from store of DHBVN/UHBVN etc. shall be borne by the vendor. The whole LOT of material shall be considered as rejected in such case.

4. Material Inspection at Contractor stores for Turnkey Contracts

4.1. Inspection of material procured under turnkey contracts shall be conducted in the similar manner as envisaged for material procured by MM department.

Verification of material received at contractor's site store shall be carried out as under:

- a) A committee of 2 officers of the rank of Executive Engineers would ensure checking quality and quantity of material brought by the turnkey contractor in his site stores. The officers for the said committee would be appointed by CGM/PD&C or CE/OP concerned, in rotation.
- b) The above said checking would be carried out in line with the source of procurement of material i.e. to be procured from prescribed empanelled firms only and further for the quantity & quality mentioned in the contract.
- c) The committee will draw sample from each lot received in anyone of the store to carry out checking as under:-
 - Genuineness of seals provided during inspection
 - Workmanship of material received in store
 - Quantity of material inspected viz-a-viz received quantity
 - Quality of material received in the store
- d) The above said inspection / checking would be carried out to check all physical parameters as per approved technical specifications of the Nigam / Engineering Design / Drawings as stipulated in the turnkey bid documents.
- e) After completion of the above said inspection / checking, a joint verification report (JVR) would be prepared by this committee for submission to the concerned office and monitoring agency i.e. SE/Const. or concerned SE (OP) as the case may be for reference and record in their office.
- f) The above said committee may also draw samples randomly for any material for its testing from any NABL accredited testing lab as approved by the Nigam, maintaining confidentiality. No single Lab is to be patronized.
- g) The payments to the contractors would be released on the basis of reports submitted by the committee through JVR and subject to reports received from testing lab.
- h) The material received at the site stores of contractor shall not be allowed for use unless the test reports from NABL accredited lab is received by DHBVN/UHBVN. However, in case of any urgency to issue material in the field, an undertaking may be obtained from the Vendor stating that in case the material fails in the NABL Lab, the cost of replacement of material including its erection and dismantling at site, transport of material from stores of DHBVN/UHBVN etc.

shall be borne by the vendor. The whole LOT of material shall be considered as rejected in such case

4.2. Randomly, a committee of two XENs to be constituted by Director/Projects may also draw sample from any lot for cross checking as per (c).

5. Workmanship and Measurements of erected material

5.1. Checking during erection phase

It is the responsibility of concerned office to carry out inspection during the erection of material at site by Contractor. The following shall be checked:-

- a) Whether the work is being carried out as per the Work Order
- b) Standard Drawings are being followed or not
- c) Erection is being done as per the standard practices
- d) Inspected material is used at the site
- e) Measurement of works

To ensure proper quality and workmanship on the works under execution, the following checks shall be exercised by various field officers / officials without any exception.

1. JE (OP/Const) : 100% of work done under each turnkey contract in his area
2. SDO (OP/Const) : 20% of work done under each turnkey contract in his area
3. XEN (OP/Const) : 20% of work checked by SDO/OP/Const. under each turnkey contract per sub-division

5.2. The team may be nominated at random by Director/Projects which will carry out the inspection of minimum 10% works executed to check workmanship, quality and quantity of material used.

5.3. Taking-Over

- In addition to the above checking, a committee of two XENs, one each from operation and construction wing will be constituted by CGM/PD&C or CE/OP concerned to carry out joint inspection of works executed by turnkey contractor

before taking over the work and their report will be considered final for all intents and purposes.

- A joint verification report shall be made, indicating all the shortcomings observed in the erection.
- Contractor shall be given time to rectify the erection works as per the observations in the JVR.
- The contractor shall give in writing that all the shortcomings have been resolved and the works are ready for taking over as per the DHBVN/UHBVN standards to be verified by same team which raised the observation points.
- The balance payments to the contractors would be released on the basis of final reports submitted by the committee.

6. Delivery Schedule and Payment Terms

The material provided in the turnkey contract shall be allowed to be delivered in order of its sequence of installation in the field. Material required later and delivered earlier shall not qualify for release of payment. Normally the supply of material shall be splitted into 3 to 4 lots as per its requirement to complete the work within Contract Delivery Period (CDP). However, in case the value of the turnkey contract is high and CDP is longer in case of work order issued by PD&C, the number of lots beyond 4 (lots), if any will be decided by CGM/PD&C. Similarly, if the value and CDP of the contract is low, the material can be accepted in two lots with the approval of CE/OP.

Please refer Annexure – V for the delivery and payment schedule for the turnkey contracts to be executed under PD&C.

Chief Engineer/MM
DHBVN Hisar

ANNEXURE – I

Format for raising Inspection Call by the Vendor / Contractor

From,

Name of the Firm with Complete Address

To,

Concerned Department (CGM(PD&C)/CGM(MM)/SE(OP))
Address

Subject:- Inspection Call for _____ No [Items] as per Work Order / Purchase Order No -
_____ dt. _____

Sir,

This is with reference to subject cited Work Order / Purchase Order. We would like to inform that below mentioned material is ready for Inspection:

Sr No	Item Description	Quantity as per WO/PO	Quantity already Inspected & supplied	Quantity offered for Inspection	Balance Quantity	Contract Delivery Period

It is requested to kindly depute an officer for inspection of the materials. The name and contact details of the person responsible for getting the inspection conducted is:-

_____ [Contact Details of Person]

_____ [Date and Place for Inspection]

Signature
Name
Designation
Company Seal

Note:-

All the details like WO/PO number, quantity ordered, quantity already inspected, quantity offered for inspection, date of inspection, place etc shall be clearly indicated in the format.

ANNEXURE – II

Format for Inspection requisition to Inspecting Officer / Third Party

From,

Concerned Department (CGM(PD&C/CGM(MM)/SE(OP))
Address

To,

Inspecting Officer / Third party agency

Subject:- Inspection Requisition for _____ No [Items] as per Work Order / Purchase Order No - _____ dt. _____
placed on M/s _____

With reference to subject Work Order / Purchase Order No. and Vendor / Contractor inspection call dated. _____, you are requested to carry out the inspection of following material:

Sr No	Name & Complete Address of the supplier along with works, telephones/Fax & telegraphic address	Material Description	Reference Standard, DHBVN/UHBVN specs, drawings	Quantity as per WO/PO	Quantity already supplied	Quantity now offered for Inspection	Balance Quantity	Contract Delivery Period

The name and contact details of the person responsible from for getting the inspection conducted is:-

_____ [Contact Details of Person]

_____ [Date and Place for Inspection]

Signature & Designation of
Inspection Requisition Agency

Encl: - Inspection Call by the Vendor / Contractor

ANNEXURE – III

Format for Joint Verification Report

Name of the Work : - _____
Name of the Contractor : - _____
Work Order No : - _____ dt. _____
Circle / Division/ Sub-Division: - _____
Joint Verification Committee : - _____ DHBVN/UHBVN
[Name of Officers] _____ Contractor's representative

Short description of Work:

Joint Verification of the material received at the stores of _____ [Name of Contractor] was performed on _____ [date]. The observations on the same are listed below:-

Sr No.	Particulars of the Material	Quantity as per Work Order	Quantity as per Inspection Report	Quantity Received at site store	Balance Quantity	Position of Seals	Physical Parameters	Remarks

In view of the above mentioned remarks, _____ [Name of the Contractor] shall rectify the defects observed at the earliest and the same shall be verified by the Joint Committee for confirmation.

It is also informed that the _____ [Material Name] bearing Sr No. _____ [Serial number] shall be sent to the _____ [NABL accredited testing Lab] for testing.

Signature of Contractor
or his representative

Signature & Designation
of checking officer

Signature & Designation
of checking officer

ANNEXURE – IV

Format for checking during erection of material by the contractor

Name of the Work : - _____
Name of the Contractor : - _____
Work Order No : - _____ dt. _____
Circle / Division/ Sub-Division: - _____
Name of Inspecting Officer : - _____
Inspection Report No. & Date: - _____

Short description of Work:

Checking was conducted on the progress and quality of erection work on _____ [date] and the report of the same is as below [Example]:-

Sr No.	Description of Work	As per Standard Practice (Yes/No)	Remarks
1.	Distribution Transformer Erection	Yes	--
2.	DT Earthing	No	Earthing Strip not connected to earth point.
3.	Conductor stringing for HT feeders	No	1. Sag not maintained by the contractor. 2. Steel Structure at H Poles not earthed
4.			
5.			

In view of the above mentioned remarks, the contractor _____ [Name of the Contractor] be directed to rectify the defects observed at the earliest and the same shall be communicated to this Office for necessary verification.

Signature and Designation of Checking Officers

- 1.
- 2.

ANNEXURE – V

Delivery and Payment Schedules for Turnkey Contracts

Sr No	Lot No	Material to be supplied	Eligibility for supply of material	Payment against supply and erection
1	Lot – 1	30% of material as per Bid	As mentioned in the bid document	50% of the cost of material supplied in Lot-1 on the basis of JVR
2	Lot – 2	30% of material as per foot survey Including spillage as above	After erection of 80% of the material supplied in Lot-1 and certified by Xen (OP/Const)	50% of the cost of material supplied in Lot-2 on the basis of JVR + 40% of cost of material of Lot-1 against erection + 85% of erection charges of the work done.
3	Lot – 3	30% of material as per foot survey	After erection of 100% of material supplied in Lot - 1 AND 80% of the material supplied in Lot-2 and certification by Xen (Op/Const.)	50% of the cost of material supplied in Lot-3 on the basis of JVR + 40% of cost of material of Lot-2 on erection + 85% of erection charges of the work done.
4	Lot – 4	Balance 10% of material as per Foot survey	After erection of 100% of material supplied in Lot - 2 AND 80% of the material supplied in Lot-3 and certification by Xen ("Op/Const.)	50% of the cost of material supplied in Lot-4 on the basis of JVR + 40% of cost of material of Lot-3 on erection + 85% of erection charges of the work done.
5	--	--	--	Balance Payment (i.e. 10% of cost of material in Lot - 1, 2 & 3 + 50% of cost of material in Lot-4 + balance payment for erection) to be made after taking over (including CEI Clearance if required)

1	Item no.	
2	Originating office	Chief Engineer/MM
3	MD/Director concerned	Director/Projects
4	Approved by	Director/Projects
5	Subject	Quality Assurance Plan
6	Meeting to be placed in (BOD's)	Board of Directors

Quality Assurance Plan for DHBVN/UHBVN is prepared and put up for kind consideration and approval of the Board of Directors please.

DA/As above

Chief Engineer/MM
DHBVN Hisar