

## **Guidelines for Quality Assurance Mechanism under Deendayal Upadhyaya Gram Jyoti Yojana**

The Project Implementation Agency (PIA) shall be solely responsible & accountable for assuring quality in Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) works. Project Implementing Agency (PIA) shall formulate a detailed comprehensive Quality Assurance (QA) plan for the works to be carried out under DDUGJY scheme with an objective to create quality infrastructure works. The QA and Inspection Plan shall be integral part of the contract agreement with turnkey contractor or equipment supplier and erection agency as the case may be in case of turnkey/partial turnkey/ or departmental execution of works. PIA has to ensure that the quality of materials/equipment's supplied at site and execution of works carried out at field under DDUGJY scheme is in accordance to Manufacturing Quality Plan (MQP)/Guaranteed Technical Particulars (GTP) and Field Quality Plan (FQP)/Approved Drawings/Data Sheets respectively.

**Quality checks to be ensured by PIA/Turnkey Contractor:** PIA & Turnkey Contractor shall strictly ensure QA checks during the day to day course of project execution, which are as follows:

- a. 100% pre-dispatch inspections of all materials viz. as per MQP/ Approved Drawings/ Technical Specifications/Datasheet/GTP/applicable national & international standards.
- b. 100% villages with all infrastructures are to be verified for quality as per MQP/Datasheet/GTP/ Approved Drawings/Technical Specifications and FQP.
- c. 100% of all 66/11 or 33/11 kV sub stations (New & Augmented) for quality of material as per MQP/Approved Drawings/Technical Specifications/Datasheet/GTP and erection works in the field as per FQP/approved survey drawings/layout.
- d. 100% verification of BPL HHs connections released.
- e. 100% verifications feeders created under the scheme.
- f. 100% verification of materials utilised under the scheme.
- g. 100% verification of works done in Metering, SAGY & System Strengthening.

**Vendor approval:** All the materials procured for DDUGJY works shall be purchased from the authorised vendors approved by their Quality Assurance Department of PIA. Approved vendors list is to be uploaded periodically (monthly) on the PIA web portal.

New vendors/suppliers may be approved by PIAs, provided capability of manufacturer's is assessed suitably by visiting the factory premises and checking the testing facility available before accepting it as approved vendor. If required, State Electricity Board/Power Department/ Distribution Companies may adopt vendors already approved by CPSUs.

**Material Inspection:** All six materials of 33/11kV or 66/11kV substations and materials required for Village Electrification shall be inspected at manufacturer works/premises before dispatch at site. The materials to be used under the scheme shall be as per Technical Specification attached with Standard Bidding Document of DDUGJY scheme or as per latest relevant Indian Standards/approved Datasheet/drawings/GTP/MQP.

*Note: PIA to perform one stage inspection of Power/Distribution transformer for each manufacturer.*

**FQP for Civil works:** PIA shall prepare a separate FQP for civil works supported with drawings which shall be approved by their competent authority which shall be uploaded at web portal. The turnkey contractor shall adhere to this FQP while carrying out physical works.

**FQP for testing & commissioning:** PIA shall prepare a comprehensive FQP for testing & commissioning of 33/11kV or 66/11kV substation, Distribution transformer Substation etc. as well as infrastructure created during electrification of villages/habitations. The electrical system shall be energized only after performing all tests as described in the FQP. Proper records in this regard, including tests on earth resistance, insulation resistance of 11 kV line & Distribution Transformer etc. shall be maintained, jointly signed by PIA and turnkey contractor representatives.

**QA documentation:** All the quality assurance checks shall be conducted in the field as per approved Field Quality Plan(FQP) and shall be documented properly and signed by the quality engineer of the turnkey contractor & countersigned by PIA's representative and shall be kept for future reference. These documents shall be maintained by PIAs in proper order and shall be made available at site for verification by Quality Monitors during inspection.

### **Quality Assurance Mechanism to be envisaged by REC/MoP for DDUGJY Projects**

DDUGJY Projects shall have a single tier Quality Assurance Mechanism (QAM). The single tier QAM shall exclude the in-house process quality checks followed by the Project Implementation Agency (PIA) during the physical execution of the project.

Rural Electrification Corporation (REC), the nodal agency for the DDUGJY scheme shall operate for Quality Assurance Mechanism. REC shall designate a senior officer (ZM/CPM of the state) as REC State Quality Assurance Coordinator (RSQAC) at its State level Zonal/Project office. REC corporate office shall designate a senior officer not below the level of AGM/GM as RQAC.

Under this mechanism, *RQM shall oversee the compliance of DDUGJY guidelines, adherence to system procedures etc. shall be verified by an independent inspecting agency.*

REC shall outsource independent agency(ies) designated as REC Quality Monitors (RQM) to ensure quality of materials procured and shall also verify quality of works carried out under the DDUGJY scheme. RQM shall carry out pre-dispatch inspection of six materials randomly in a single lot containing minimum 10% materials at manufacturer works. RQM shall also verify quality of works carried out in the Project, which are as follows:

- 100% of the Un-electrified and 10% of Intensive Electrified villages where electrification works has been carried out excluding SAGY villages, *(Note: Villages includes Habitations/Dhani/Majra/Tolas/Thandas etc.)*
- 10% of Feeders created under Feeder Separation,
- 1% Consumer Meters & 10% of Industrial/Commercial Meters or 3-Phase Distribution Transformer Meters,
- 100% works carried out in Sansad Adarsh Gram Yojana (SAGY) ,
- 100% of new substations (66/11 or 33/11kV),
- 25% of augmented substations (66/11 or 33/11kV),

**Material Inspection:** Six important materials of 33/11kV or 66/11kV substation including materials to be used for village electrification shall be inspected at manufacturer premises before dispatch.

1.1. **Inspection of substation materials:** Following materials have been identified as important materials for 33/11 or 66/11kV Substation:

1. Power Transformer,
2. Circuit Breaker,
3. Insulators,
4. Cables
5. Conductor
6. Control & Relay Panel,

1.2. **Inspection of Village Electrification Materials:** The materials which have been identified for pre-dispatch inspection at manufacture premises is as follows:

1. Distribution Transformer,
2. Overhead Conductor,
3. Energy Meter,
4. Pole,
5. Insulators,
6. Cables,

At least one type from each of the aforesaid 6 (six) materials to be utilized in substations and villages' electrification shall be inspected by the RQM as per MQP. The inspection/testing/witnessing of acceptance tests shall be as per approved Drawings/Technical Specifications/Datasheet/GTP/ and applicable national & international standard.

1.2.1. **Sampling from field:** Any material, including materials listed below, may be picked from site for testing at test laboratory chosen by inspecting official.

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|------------------------------|--------------------|
| 1. Distribution Transformer, | 5. Insulators,     |
| 2. Overhead Conductor,       | 6. Cables,         |
| 3. Energy Meter,             | 7. Circuit Breaker |
| 4. Pole,                     |                    |

*All expenditures that shall incurred towards packing, transport, inspection, testing charges etc. are to be borne by the PIA.*

1.3. Villages' inspections are to be done as per approved FQP/Drawings/Technical Specifications/Datasheet/survey report. The villages inspection that shall be carried out by REC Quality Monitors, which are as hereunder:

1.3.1. 100% Un-Electrified (UE) and 10% of Intensive Electrified (IE) villages are to be inspected in 2 (two) stages including SAGY villages. Stage-I & Stage-II inspections shall cover 50% UE & 5% of IE villages respectively.

1.3.2. **Stage-I** inspection of RQM shall commence in a project when 50% of UE & 30% of IE villages are completed in all respect. Five (5) nos. of villages in a project are to be thoroughly inspected at the very beginning when the same is completed in a project. *These villages after rectification of defects will become modal quality village. The findings of inspection of these five villages shall be used as training resource and necessary improvement in Quality Assurance.*

**1.3.3.** **Stage-II** inspection of RQM shall commence and end in a project when 100 % of UE & 70% of IE villages are completed in all respect.

1.4. (a) Inspection of 100% new (33/11 or 66/11 kV) substation for quality works as per FQP.

(b) Inspection of 25% augmented (33/11 or 66/11 kV) substation for quality works as per FQP.

1.5. Inspection of 100% works carried out in Sansad Adarsh Gram Yojana(SAGY) including HT Lines, LT lines, Distribution Transformer Substation, BPL HHs connection released or any other works not stated herein but have been carried out under the scheme in that village(s).

- 1.6. In 100% UE & 10% IE villages of the project; 100% verification of BPL connections, 100% of Distribution Transformer Substations, 1km(for hilly areas)/2km (for plain areas) of 33kV Lines, 100% verification of LT Lines and 100% of the 11KV lines attributed to the village (emanating from cut-point/grid substation) as well as the 11 KV line laid within the village, verification of village energisation & BPL beneficiaries, installation of service connections in public places, hours of supply in the village, time taken by DISCOM to raise first energy bill in favor of beneficiaries.
- 1.7. REC Quality Monitor shall also oversee the Contract Management Part of PIA like adherence to Standard Bidding Document, PMA appointment, adherence to Quality Assurance Mechanism of DDUGJY scheme, Contractual provisions pertaining to defects identification and rectification, resolution of project related issues and action on delayed project. In their visit, RQM would give thrust on adherence on systems and procedures of DDUGJY schemes by PIA and turnkey contractors during project implementation. Also, RQM would ensure availability and awareness of project specific drawings, documents, quality assurance plans among all stake holders in PIA contractor staff/workers.
- 1.8. REC Quality Monitors shall oversee the progress of up-loading of monitoring observations raised by inspectors during inspection and submission of compliance by PIA with supporting site photographs details in DDUGJY web portal.

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### Abbreviations:

DDUGJY	-	Deendayal Upadhayaya Gram Jyoti Yojana
MoP	-	Ministry of Power
REC	-	Rural Electrification Corporation Ltd
PIA	-	Project Implementation Agency
QAM	-	Quality Assurance Mechanism
UE	-	Un-Electrified
IE	-	Intensive Electrified
HH	-	Households
QM	-	Quality Monitor
QA	-	Quality Assurance
FQP	-	Field Quality Plan
MQP	-	Manufacturing Quality Plan
PQAC	-	PIA Quality Assurance Coordinator
RQAC	-	REC Quality Assurance Coordinator
SAGY	-	Sansad Adarsh Gram Yojana
GTP	-	Guaranteed Technical Particulars
CPSU	-	Central Public Sector Undertaking
SQAC	-	State Quality Assurance Coordinator
RSQAC	-	REC State Quality Assurance Coordinator
ZM	-	Zonal Manager
CPM	-	Chief Project Manager
ZO	-	Zonal Office
PO	-	Project Office
BPL	-	Below Poverty Line
BOQ	-	Bill of Quantity
Village	-	Village means village with all associated Hamlets/Mauza/Dhani/Thanda etc.