

OPERATIONAL MANUAL

Quality Monitoring of DDUGJY-RE Works



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Copy of
Inspection Notice
issued by REC



RURAL ELECTRIFICATION CORPORATION LIMITED
(A Government of India Enterprise)

Regd Office: Core-4, SCOPE Complex, 7 Lodi Road New Delhi
110003 Tele. 24365161 Fax 24360644 Email reccorp@recl.nic.in
Gram RECTRIC Website www.recindia.com & www.recindia.nic.in

Inspection call No. REC/DDUGJY/2015-16/

Date:

<Name and Address of NQM>

Kind Attn: Ms/Shri

Sub: DDUGJY (RE) –Inspection of Rural Electrification works by National Quality
Monitors in projects of State – Stage-
Ref: Our LoA No. dated

Ma'M/Sir,

This has reference to our Letter of Award (LoA) under reference nominating your agency as National Quality Monitor under Quality Control Mechanism for DDUGJY (RE) Projects in projects of State under ... Plan. In line with the terms of LoA, it is requested to carry out inspection of following under Stage- :

S. No.	Name of Project	Nos. of Villages*	Nos. of Substation

*The associated habitations, majra, tola etc are also to be inspected. List of associated habitations, majra, tola etc covered under DDUGJY may be obtained from PIA.

The details of villages and substations to be inspected are enclosed at Annexure-I.

Further, it is requested to submit the inspection reports as per the prescribed format at the earliest. The inspections carried out by your agency may be cross-examined by REC team. Under Stage-II, your agency is requested to review the inspections carried out by REC Quality Monitor (Tier-II) and submit the comments on their reports. Your agency is requested to submit the report (Hard copy as well as Scanned copy) to Ministry of Power and REC Corporate Office. A scanned copy is also to be submitted to respective Project Office of REC and PIA.

Thanking You,

Yours Sincerely,

G S BHATI
GM (DDUGJY)

Copy to:

- (i) Shri K K Mishra, Dy. Secretary(RE), MoP, New Delhi for kind information.
- (ii) The Chief Project Manager, REC Project Office, for providing necessary assistance to NQM please
- (iii) <Name and Details of PIA> to coordinate with NQM in your respective districts

List of Villages/Substations to be inspected by NQM in State – Stage

S. No.	Name of Project	Name of PIA	Name of Village with census code*	Category of village (UE/PE)	Infrastructure in the village				Name of Substation with Type (New/Aug)
					DT (Nos)	HT line (Km)	LT line (Km)	BPL H/Hs (Nos)	

*NQM agency is also requested to inspect all the habitations (covered under DDUGJY-RE) associated with aforementioned villages.

Joint Signatures of NQM Agency's Personnel Involved

Brief Profile
of the
Signatories of the
report

Brief Profile of Finaliser and/or Reviewer of inspection report:

Name of the Person:

Date of Birth:

Designation:

Qualification:

Experience (with Details in Brief):

Brief Profile of inspecting officer:

Name of the Person:

Date of Birth:

Designation:

Qualification:

Experience (with Details in Brief):

Abstract
Of
Village Inspection
Report

DDUGJY (RE): Village Inspection Report by RQM/NQM viz. (Agency Name)

(Village include all majras/tolas/habitations under the revenue village covered under sanctioned DDUGJY-RE project)

1	Inspection Call Reference No.			
2	Date of Inspection			
3	(i) District (Census code) / Project (DPR Code)			
	(ii) Block & Census code			
	(iii) Details of Village	Name	Census Code	Status (UE/PE)
	(iv) Details of Habitation	Name	Census Code	Status (UE/PE)
4	Name of the Project Implementing Agency (PIA)			
5	Name of the Turnkey Contractor			
6	Total No. of Households coverage as per DPR	BPL	APL	Total

7 BPL households

Latest BPL Coverage (As per latest sanction)	BPL Connections Released				Actual No. of BPL HHs Inspected	No. of BPL HHs charged out of the inspected BPL HHs	Nos.of BPL HHs yet to be charged out of the inspected BPL HHs
Total	S C	S T	Oth ers	Tot al	Total	Total	Total

8 APL households

No. of APL HHs applied for connection	No. of connections released to APL HH	No. of APLs not willing to avail connection	Reason for APL HHs not availing connection

9 **Details of Physical Quantity of executed work in inspected village**

Name of the material/ equipment as per scheme coverage in the inspection area	Unit	As per DPR/RCE / approved BOQ/As built drawing	Quantity at field of executed Work	Variations, if any and remarks
I. Major physical quantities:				
1	BPL Households	No.		
2	Distribution Transformer with Serial No.	No./ each KVA		
3	33 KV / 11 KV circuit Length	Km.		
4	LT circuit Length	Km.		
5	No. of Poles	Nos.		

10 **Checking of Test Report:**

Sl. No	Name of Equipment/materials of which test report checked	Whether All tests performed as per relevant latest IS / REC Spec. (Yes/No)	Whether Test results are acceptable as per IS / REC Spec. (Yes/No)	Discrepancies found in test report of equipment/material
1				
2				
3				
4				

1	No. of Hours of power supply in the village (Avg hours of supply per day in a month)	
2	Specific comments about the difficulties/ constraints and various reasons for not providing of minimum 6-8 hrs of power supply	
3	Specific comments on the nature and characteristics of load shedding	
4	Whether the newly developed system has been charged/commissioned?	
5	Whether the newly developed infrastructure handed over to state Authorized Authorities?	
6	Whether certificate from Gram Panchayat furnished?	

7	Whether Franchisee appointed? If yes, Type of Franchisees eg. i) Revenue Franchisee - Collection Based, (ii) Revenue Franchisee - Input Based, (iii) Input Based, (iv) O & M Based, (v) Rural Electric Co-operative Society Based and (vi) Other model implemented, if any specify.			
8	Verification of Electrification of public facilities viz., Hospital, School, Panchayat office etc, if any:(Y/N)	Access available	Access available but not charged	Electrified
9	Comment on socio-economic improvement in the village on account of DDUGJY programme and that due to availability of power:			
10	Whether Project Management System (PMS) has been deployed in PIA/DISCOM/State Headquarter and in a project as per PMS guidelines. Please enclose the structure of manpower deployed.	Yes/No (Enclosed at Annexure -)		
11	Whether SBD documents and XII Plan guidelines were followed for award of contract and execution of project? List out major deviations from SBD/guidelines including deviation if any in e-tendering, payment terms, PQR, Quality guidelines etc.	Yes/No (Enclosed at Annexure -)		
12	Comments on contract management part of PIA			
13	Feedback from Public:			

21

Observations:

Sl. No.	Category	No. of instances(Nos)	Reason for deviation
1	Electrification of all BPL HHs as per DDUGJY (RE) guidelines		
2	Supplying for minimum 6-8 hours of power to the village		
3	Physical quantity with reference to the reported executed quantity (Refer Annexure – III)		

22 Deficiencies/Discrepancies on executed works and non-compliance of construction standards:

Sl. No	Category	No. of discrepancies (Nos)	Nature of Discrepancies/Deviations	Suggestion for corrective action
1	Quality of materials installed/commissioned		Refer Annexure - I	
2	Quality of works/ workmanship		Refer Annexure - II	
Total No. of Discrepancies				

23 General Observations:

Seal and Signature:

Name:

Designation:

Date:

Phone no.:

(Inspecting Engineer)

Seal and Signature:

Name:

Designation:

Date:

Phone no.:

(Reviewer of the report)

Abstract
Of
Sub-station Inspection
Report

CONTENTS

Sl. No.	Description	Page No.
I	Basic Information	
II	Land Details	
III	Civil Works	
IV	Layout of the Sub- station	
V	BOQ details of major equipments	
VI	Safety & Protection aspects	
VII	Equipment erection	
VIII	Miscellaneous	
IX	General observations	

I. BASIC INFORMATION

- i. Inspection call reference No. :
- ii. Date of inspection :
- iii. Name of the project/District :
- iv. Name of the Block/Village of the
Sub-station :
- v. Name of the Sub-station(location) : New/Aug
- vi. Name of the Inspection officer & Agency :
- vii. Name of the Project Implementing Agency :
- viii. Name of the Turn key Contractor :
- ix. Date of commissioning of Sub-station, if
already commissioned :
- x. Details of the accompanying officials, if any,
in respect of Project Implementing Agency,
Third Party Inspection Agency, Turnkey
Contractor, etc. :

II. LAND DETAILS

- i. Land area sufficiency :
- ii. Land development/levelling and
chances for water logging :
- iii. Fencing/Compound wall with
gate :
- iv. Name board of SS at entrance :

III. CIVIL WORKS

a). General

- i. Drainage System :

- ii. Roads, Culverts :
- iii. Water Supply :
- iv. Cable Trench & Cable Ducts :
- v. Foundation & Plinth for power Transformers/
outdoor 33 & 11 KV Circuit Breakers :
- vii. Fire wall between Power Transformers,
wherever applicable :
- viii. Gravelling Boundary wall/Fencing
in the S/s :
- b). Control Room :
- i. Ventilation in battery room :
- ii. Cable arrangement in the trench :
- iii. Rubber mat for the operation of control
panels and in the battery room :
- iv. First aid box provision :
- v. Drawing of schematic layout of the SS :
- vi. Key board :
- vii. Box for gloves, raincoat, tools, silicagel, etc.:

IV. LAYOUT OF THE SUB-STATION

- i. Approved Layout/SLD of 33/11 KV
Substation(copy to be enclosed) :
- ii. Whether the construction and erection
of the SS equipments as per approved layout?
(copy to be enclosed, in case of variation) :
- iii. Provisions for the future augmentation
of the SS and Power Transformers, if any :

iv. No. of 33KV incoming bays & provision for
future expansion :

v. No. of 11 KV outgoing bays & provision for
future expansion :

V. BOQ DETAILS OF MAJOR EQUIPMENTS:

Item	Quantity as per Sanction/	Quantity erected at Sub-station (with details of rating/type, make, Sr.No., capacity, etc.)	Remarks on quantity variation
a). Power Transformer			
b). 33 KV			
• Circuit Breaker			
• Lightning Arrestors			
• Station Transformer			
c). 11 KV			
• Circuit Breaker			
• Lightning Arrestors			
e). Battery Bank			
• Capacity/Type/Make			
• Battery Charger/Make			

VI. SAFETY & PROTECTION ASPECTS

Items and works	Whether the item and the work as per the REC Specification & Construction Standards and the safety aspects as per IE Rules? If not, suggestions thereof.
<i>a) Safety Clearance</i>	
i. Bus-bar arrangement	
ii. Height of bushing, terminals, low level jumpers and other live parts	
iii. Conductor size used for bus-bars	
vi. Laying of Power and Control Cables (as far as possible, to be laid separately?)	
<i>b) Stay arrangements</i>	
i. Any provision of stays for supports (not to be provided in the switch yard rather supports to be concreted)	
<i>c) Earthing System</i>	
i. Earthing of equipments ii. Earthing of neutral points of different voltage systems iii. Earthing of metal frameworks not associated with power system iv. Earth resistance value	
<i>d) Bimetallic Terminal Connectors</i>	
Bimetallic terminal connectors for the copper bushings of Transformers, Circuit Breakers, and others	
e) Lightning arrestors	

f) Danger boards	
i. Danger boards in all the equipments	
g). Fire protection	
i. Firefighting equipments (fire Extinguisher) at appropriate places	
ii. Sand buckets	

VII. EQUIPMENT ERECTION

Item	Whether the item as per the REC Specification & Construction Standards and the safety aspects, wherever applicable, as per IE Rules? If not, suggestions thereof.
a) Power Transformer (Outdoor type) i. Visual examination, damages/defects, Oil leakage, silicagel and its condition, oil level in transformer, bushing bimetallic clamp and jumpers arrangements, etc	
b) Circuit Breakers Visual examination, damage/defects, Support Structure (level & verticality)	
c) CT & PT Unit Visual examination, damage/defects/oil leakage	
d) Control and Relay Panel Visual examination, damage & Defects, tightness of inter panel nuts & bolts, Glanding of external cables, Proper sealing and locking arrangement of panel door	
e) DO Fuse Protection system/ Type of relays	

e) DC System	
Visual examination, damage & defects,Charging of battery	

VIII. MISCELLANEOUS

- i. Yard lighting :
- ii. Back feeding arrangements to the SS,
if available :

Deficiencies/Discrepancies on executed works and non-compliance of construction standards:

Sl. No	Category	No. of discrepancies (Nos)	Nature of Discrepancies/ Deviations	Suggestion for corrective action
1	Quality of materials installed/ commissioned		Refer Annexure - I	
2	Quality of works/ workmanship		Refer Annexure - II	
Total No. of Discrepancies				

IX. GENERAL OBSERVATIONS :

Seal and Signature:
Name:
Designation:
Date:
Phone no.:
(Inspecting Engineer)

Seal and Signature:
Name:
Designation:
Date:
Phone no.:
(Reviewer of the report)

General Observations with
respect to
Village electrification
(Executive Summary)

Annexure-I

(Quality of Material)

Quality of Materials

Annexure-I

(Verification wrt specification, drawing and test reports)

Sr. No.	Description as per LoA	Quality / Non Compliance of Const. Standard	Critical	Major	Remarks
1.	Distribution Transformer 3 phase/1 phase				
2.	Conductor				
3.	Poles				
4.	Cable				
5.	Shackle insulator				
6.	Pin Insulator				
7	Disc Insulator				
8	Energy Meter				
9	Distribution Box				
10	BPL Meter Board				
11	Lightening arrester				
12	AB switch				
13	DO Fuse				
14	Earthing Set				
15	11 kv line				
16	LT line				
17	Stay set				
18	Channels				
19	clamps				
20	Stay wire				
21	Nuts & bolts				
22	Connectors				
23	Earthing wire				
24	GI wire				

Definition of categories

Critical: - If any item among 6 major material viz. Distribution Transformer, conductor, Cable, Energy Meter, Pole and Insulator, has been installed without any level of inspection (TPIA, RQM).

Major: - If major materials (such as- up to item 14) have been damage during storage/erection.

Minor:-If quality of bought out materials (such as channels, PG clamps etc ;)

Annexure-II

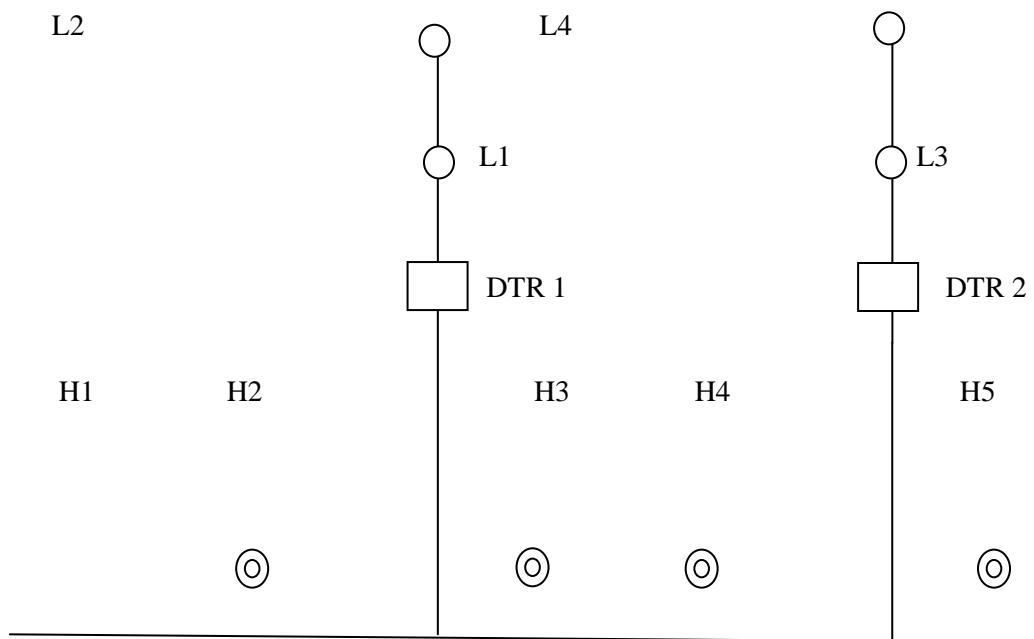
(Quality of Workmanship)

Sample Report

Annexure-II

Quality of Installation (workmanship) Showing type of defect, category, their location in photograph & SLD

S. No	Description of Defects	Picture No.	Location as per SLD	Remarks
Distribution Transformer				
1	Horn Gap fuse-set is missing	Pic no.-2	DTR 1	Not in LoA itself
2	Transformer oil Leakage	Pic no.-3	DTR 2	Oil level has fall down to minimum level
3	Lightening Arrester not connected on Y-Phase	Pic no.-4	DTR 2	
4	Danger plate missing		DTR 1	
5	Transformer body earth missing	Pic no.-5	DTR 2	
Distribution Box				
1	MCCB not installed	Pic no.-6	DTR 2	
2	Lugs are not used at Distribution Box	Pic no.-7	DTR 2	Lugs are generally not being used by PIA
3	Gland Missing at cable entry	Pic no.-8	DTR 1	Glands are generally not being used by PIA
11 kV line				
1	Guard wires (on road X-ing) not provided	Pic no.-9	H1-H2	
2	V cross-arm and top hamper not earthed	Pic no.-10	H3	
3	Conductor not installed on the top groove	Pic no.-11	H2	
4	Position of stay wire against tension	Pic no.-12	H4	
5	Sag too large - very low ground clearance	Pic no.-13	H2-H3	Fatal accident possible
LT line <i>Annexure-II(2/2)</i>				
1	Pole depth inadequate	Pic no.-14	L1	
2	Leaning pole-more than 70- to 80 degree with ground	Pic no.-15	L3	Inadequate use of brick bat
3	Damaged Pole	Pic no.-16	L2	Pole damage during Transport
4	Pole not earthed	Pic no.-17	L6	Internal earth wire not visible (broken during Transport)
5	Span length is too large	Pic no.-18	L2-L3	
BPL Connections				
1	Inferior quality of BPL Kit (Not as per specification)	Pic no.-19	Connection No. 1 (Refer BPL List)	
2	Energy meter not earthed	Pic no.-20	Connection No. 2 (Refer BPL List)	Earth wire not Laid with the service cable
Total				



Note: Such Nomenclature (H1, H2 etc for 11 KV line and L1, L2 etc for LT line, DTR1, DTR2 etc for DT) will be superimposed on the GPS SLD to be attached by the inspecting agency.

Checklist for Quality of Installation
(workmanship) in VEI& REDB (Substation)

Quality of Installation (workmanship)

Definition of Defect Categories

Defects shall be categorized into broad three types. All types of defects reported in the field shall fall in one of these categories.

1. Critical defects
2. Major defects
3. Minor defects

CRITICAL DEFECTS: These defects must be rectified before charging. Critical defects are those which endanger life and property. Dangerous deficiencies on safety, ground clearances, equipment earthing and protection would come this category. These are defects in presence of which the Electrical Inspector would not allow charging of the electrical installation. That is, if equipment are already energized, it should be de-energized and rectified without delay. If critical equipment like distribution transformer HT and LT line have been installed dangerously, the defect type would fall under critical category of defect. *Example : LA is not connected , DT neutral earth is missing , Earth electrodes not installed, Ground clearance not as per IE rule, Oil level low in transformer*

MAJOR DEFECTS: These defects must be rectified before operational handover (to Operation and Maintenance wing). These are major deviations from drawing and specification. These are serious deviation with respect to contract. The electrical installation can be charged temporarily. However, the defects should preferably be rectified before charging.

Example : Pole not pitched at proper depth, Brick-bats/ foundation inadequate, use of undersized earth wire, precariously loose electrical connections and mechanical fitting.,

MINOR DEFECTS: These defects are very minor in nature. Such defects in electrical installations keep surfacing during operation and maintenance. The installation may be charged with these defects. However they must be rectified

Example: Danger board not proper, energy meter not installed before contractual handover (before final payment is released and contract is closed), missing barbed wire, stay wire loose, loose fasteners, vegetation too close to HT/Lt line.

Note:

1. These defects are broad in nature. Actual field defects need to be defined more accurately by inspectors.
2. All pictures depicting defects should be numbered. Their number mentioned in the report shown in the table
3. A village infrastructure schematic (single line diagram) showing DTRs, HT and LT poles duly numbered by the inspector shall be submitted along with the report. Their number shall be used to describe location of defects for PIA to rectify.

Checklist for Quality of Installation (workmanship)

Distribution Transformer Substation

S. No	Description	Status (Yes/No)	Observations	Location	Picture No.
1	Record capacity of DTR transformer used				
2	Record S. No., make and year of manufacturing of DTR transformer				
3	Safe and adequate access to distribution transformer (DTR) substation				
4	Availability of approved survey report				
5	Proper load survey is performed of the locality for perspective consumers while deciding capacity and location of DTR				
6	Expected loading of transformer using 5 years growth is performed in survey report				
7	Proper alignment of substation structure with 11 KV line				
8	Record type of poles/support used for DTR substation				
9	Record type of foundation used				
10	Proper muffing is provided on steel supports of DTR substation				
11	If DTR substation is in water logging area, its foundation is grouted in cement concrete				
12	Proper verticality of substation supports				
13	Proper pole to pole distance of substation supports.				
14	Proper erection of jumpers and connection to DTR transformers without any bent				
15	Proper binding of insulators				
16	Stay plates are properly grouted in cement concrete mixture to support DTR substation structure (if erected)				
17	Proper tensioning is there on stay set				
18	Proper alignment of stay wire with overhead conductor				
19	Proper erection of stay clamp using 12 mm dia nuts and bolts				
20	Proper galvanization of stay wire				
21	Thimble is provided on turn buckle of stay set				
22	Stay set installation is provided with guy insulator				
23	Proper phase to phase and phase to ground clearances maintained on the substation jumpers				
24	Steel overhead structure is properly earthed using 8 SWG wire/G.I. flat?				

25	Each 11 kV overhead equipment including transformer are individually earthed using 8 SWG Earth wire/ GI flat				
26	Danger plate is installed at appropriate height using proper size clamp. Record type and size of clamp				
27	Proper anti-climbing device (barbed wire/spike) installed at appropriate height on individual support. Record quality of wrapping of barbed wire				
28	Substation is numbered				
29	Individual substation pole is imposed/painted with the name of scheme				
30	Surface of the PCC poles is finished and there are no steel wire visible				
31	No physical damages appeared on PCC pole surface				
32	GI flat to GI flat connection using at least 2 sets of GI nut bolts and washers				
33	8 SWG GI wire/GI Flat is properly dressed with support				
34	GI wire to GI wire jointing is provided using 12 SWG GI nut bolts and washers				
35	GI wire connection to earth pit is using GI nut bolt and washer				
36	GI earth pipe is properly inserted inside earth without hammering				
37	Number of earth pit used for substation earthing.				
38	Pit to pit distance in meters. Is it adequate?				
39	Masonry enclosure is provided over individual earth pits				
40	Funnel is provided over earth pit				
41	Proper jumpering using binding practices/PG clamp				
42	Proper clearances to avoid bird fault on conductors of substation supports				
43	Type and size of overhead conductors used in the substation				
44	Cement-concrete grouting foundation of substation supports				
45	Measure quantum of cement concreting in any one sample support				
46	Measure cement concreting foundation in any one sample of stay set pit				
47	Proper painting/galvanizing done on steel structure				
48	Any sign of rusting found on substation structure/hardware				
49	Any broken insulator found in the substation				
50	Disc Insulators installed precariously (loose bolts/ missing cotter pins)				
51	Separate individual earth connection using GI wire/GI flat is used for neutral earthing with separate pit				

52	Dedicated transformer body earthing using GI wire/GI flat				
53	Bimetallic clamps are provided on 11 kV bushing				
54	No gap between busing seat and bimetallic clamp on LT as well as HT bushing while connecting conductor/cable				
55	Proper lugs are provided on termination of cables				
56	Oil is filled in cup of silica gel breather				
57	Silica gel is blue in colour				
58	Oil control valves are open between transformer tank and breather (wherever used)				
59	Oil leakage from the body/gasket of transformer and from conservator tank				
60	Record level of oil in conservator tank				
61	Transformer installed precariously (Nut / bolts / side bracing missing)				
62	Transformer is fitted with 12 mm dia nut bolts on its base channel				
63	Transformer belting is provided				
64	Dimension of transformer base channel				
65	Individual lightening arrestor are earthed with dedicated separate earth pit				
66	LA jumper connections is missing/ not proper				
67	LA is charged/ installed but not megged				
68	Isolators/AB switch are properly aligned and its operation is smooth				
69	Operating handle (not missing eye bolt) of isolator/AB switch is earthed using flexible cable				
70	No joint in between entire length of operating pipe of isolator/AB switch				
71	Guiding hook is provided for isolator pipe movement				
72	Alignment of male and female contacts of isolators/AB switch and no spark during normal use				
73	Proper fuse wire is used in DO fuse/HG fuse				
74	Arching Horn is missing/ not aligned / not proper				
75	Proper size of LT cable are used between transformer and LTDB				
76	lockability and proper closing of door of LTDB				
77	Gland plate and glands are used for cable entry in LTDB				
76	No unused holes on gland plates				
77	Availability of LTDB equipment as per approved drawing and scope of work like isolator, fuse, switch, bus bar, MCCB, MCB etc.				
78	Installation of DTR as per BIS specification				
79	LTDB earthing at different points using 8 SWG GI wire				
80	Proper painting and No physical damages on LTDB				

81	Suitable loop length of cables in LTDB				
82	3 Nos earthing pit and earth mat /risers using 50X6mm GI Flat are used as under:				
a	a) Earth Pit – 1 for Transformer Neutral,				
b	b) Earth pit - 2 for Lightning Arrester,				
c	c) Earth pit – 3 for Equipment body earthing				
83	Metering of DTR substation				
84	Type of meters used and its healthiness				
85	Quality of painting/galvanizing on substation structure				
86	DTR is newly supplied				
87	PG Clamps are used (wherever needed as per drwg- Jumper etc)				
88	Energy meters (@ 11 kV feeder , DT , BPL consumer) at installed at appropriate height				
89	Earthing Electrodes short/missing				
90	Commissioning Defect: DT charged/installed but not merged				
91	Fasterers (Nuts/ Bolt/ Clamps /Connector) size not as per drawing /specification				
92	Fasteners (Nuts / bolts/ Clamps / connectors) in precarious state				
93	Poles not erected properly (inadequate or missing brick bat/ foundation)				
94	Stay installation is not proper : guy insulator missing ;inadequate depth				
95	Earthing wire diameter undersize				
96	Danger plate missing/improper				
97	Earthing wire not secured / not dressed				
98	Barbed wire missing/improper				
99	DTR ground electrodes far too close				
100	Earth pit to earth pit clearance not maintained				
101	HT Fuse not provided				
102	HT fuse unit jumpering not connected properly				
103	MCCB of lower rating than specified in LOA				
104	MCCB not installed				
105	Inferior quality of Distribution Board used (makeshift, locally fabricated DBs)				

LT Line

S. No	Description	Status (Yes/No)	Observations	Location	Picture No.
1	Availability of approved survey report with Single line diagram				
2	Correct alignment of LT line				
3	Type of poles used as per scope of the work				
4	Type of foundation used as per scope of work				

5	If line is passing through water logging area and its foundation is grouted in cement concrete				
6	Proper verticality of poles				
7	Any deflecting tension on LT pin insulator				
8	Proper tensioning of overhead conductor/LT cable/ABC Cable				
9	Any knot/wrapping of overhead conductor /LT cable /ABC Cable is there during erection				
10	Proper binding of insulators cable both / tension work is done				
11	Stay plates are properly grouted in cement concrete mixture				
12	Proper tensioning is there on stay set				
13	Proper alignment of Stay wire and stay set with overhead conductor is there to nullify tension				
14	Proper erection of stay clamp using 12 mm dia nuts and bolts and 50x6 mm (or more) size clamp				
15	If every 6th pole in a section of line is provided with stay sets to avoid line deflection				
16	Proper galvanization of stay wire/stay set				
17	Thimble is provided on turn buckle of stay set				
18	Proper phase to phase clearances are maintained on the line				
19	Steel overhead structure is properly earthed using 8 SWG wire				
20	Each LT pole individually earthed using 8 SWG Earth wire and separate Earth pit/Earthing coil/Earth spike				
21	Quality and size of danger plates is as per scope of work				
22	Danger plate is installed at appropriate height using proper clamp as per scope of work				
23	Anti-climbing device (barbed wire/spike) are installed at appropriate height on individual support				
24	Individual pole is numbered				
25	Individual pole is imposed/painted with the name of scheme				
26	Surface of the PCC poles is finished and there are no steel wire visible				
27	No physical damages appeared on PCC pole surface				
28	Cradle guard earthing is provided on each road crossing or on each LT line crossing				
29	Proper tensioning of the cradle guard wires				
30	Separate earthing on both the sides of road/line for cradle guarding are there				
31	8 SWG G.I. wire is properly dressed with support for V-Cross arm/Channel/Top clamp earthing				
32	GI wire to GI wire jointing is provided using 12 SWG GI nut bolts and washers				

33	GI wire connection to earth pit is using 12 mm GI nut bolt and washer				
34	Earth pipe is properly inserted inside earth without pipe hammering				
35	Masonry enclosure is provided over individual pipe earth pits				
36	Funnel is provided over pipe earth pit				
37	Jumpering using best binding practices/PG clamp				
38	Proper conductor clearances to ground is there to avoid bird fault on end sectionizer support where disc insulator are used				
39	Average pole to pole span length in the line. It should not be less than 50 m.				
40	If Pole to pole span is less than 50 m, record the reason with pole numbers				
41	Number of poles used per kilometre of the line				
42	Type and size of overhead conductors/ABC cable used in the line				
43	Shuttering is used during casting of cement concrete foundation				
44	Cement-concrete grouting foundation of end supports				
45	Quantum of cement concreting in any one sample support				
46	Cement concreting foundation in any one sample of stay set pit				
47	Proper painting is done on steel structure				
48	Any broken insulator found in the line				
49	Surface finish of painting on Steel tubular pole/RSJ/H Pole/Rail pole about 2 m from bottom and above 2 m				
50	Possible damage on ABC cable surface				
51	Piercing connections are used to take-off connection from ABC cable				
52	Muffing is used in steel steel tubular poles, rail pole, RS joint/H beam Supports				
53	Adequate tree cutting on either side of line done				
54	Pole to pole schedule enclosed with profarma				

11 KV Line

S. No	Description	Status (Yes/No)	Observations	Location	Picture No.
1	Availability of approved survey report with single line diagram				
2	Correct alignment of 11 kV line				
3	Type of poles used as per scope of the work				
4	Type of foundation used as per scope of work				
5	Record whether line is passing through water logging area and its foundation is grouted in cement concrete				
6	Proper verticality of poles				

7	Cross-bracing on Double poles are provided				
8	Conductors are passing through the top groove of the insulator (creepage distance compromised)				
9	More than one joint in one span				
10	Any deflecting tension on 11 KV pin insulator				
11	Proper tensioning of overhead conductor				
12	Any knot/wrapping of overhead conductor is there during erection				
13	Proper binding of insulators is done				
14	Stay plates are properly grouted in cement concrete mixture				
15	Proper tensioning is there on stay set				
16	Proper alignment of Stay wire with overhead conductor is there to nullify tension				
17	Guy insulator, anchor plate/ thimble/ hardware are provided with stay set				
18	Proper erection of stay clamp using 12 mm dia nuts and bolts and 50x6 mm (or more) size clamp				
19	If every 6th pole in a section of line is provided with stay sets to avoid line deflection				
20	Proper galvanization of stay wire and stay set				
21	Thimble is provided on turn buckle of stay set				
22	Proper phase to phase clearances are maintained on the line				
23	Steel overhead structure is properly earthed using 8 SWG wire				
24	Each 11 kV pole individually earthed using 8 SWG Earth wire and separate Earth pit/Earthing coil/Earth spike				
25	Quality and size of danger plates is as per scope of work				
26	Danger plate is installed at appropriate height using proper clamp as per scope of work				
27	Anti-climbing device (barbed wire/spike) are installed at appropriate height on individual support				
28	Individual pole is numbered				
29	Individual pole is imposed/painted with the name of scheme				
30	Surface of the PCC poles is finished and there are no steel wire visible				
31	No physical damages appeared on PCC pole surface				
32	Cradle guard earthing is provided on each road crossing or on each LT line crossing				
33	Proper tensioning of the cradle guard wires				
34	Proper Guard wires are provided in case of Road crossing as per drawing specification				
35	8 SWG G.I. wire is properly dressed with support for V-Cross arm/Channel/Top clamp earthing				

36	GI wire to GI wire jointing is provided using 12 SWG GI nut bolts and washers				
37	GI wire connection to earth pit is using 12 mm GI nut bolt and washer				
38	Earth pipe is properly inserted inside earth without pipe hammering				
39	Masonry enclosure is provided over individual pipe earth pits				
40	Funnel is provided over pipe earth pit				
41	Proper jumpering using binding practices/PG clamp				
42	If under sized conductor used				
43	Proper conductor clearances to ground is there to avoid bird fault on end sectionizer support where disc insulator are used				
44	Proper pole to pole span length in the line. It should not be less than 50 m.				
45	If Pole to pole span is less than 50 m, record the reason with pole numbers				
46	Number of poles used per kilometre of the line				
47	Record type and size of overhead conductors used in the line				
48	Shuttering is used during casting of cement concrete foundation				
49	Cement-concrete grouting foundation of end supports				
50	Measure quantum of cement concreting in any one sample support				
51	Measure cement concreting foundation in any one sample of stay set pit				
52	Proper painting is done on steel structure				
53	Disc Insulators are installed precariously (loose bolts/ missing cotter pins)				
54	D -shaped loop for jumpers are maintained				
55	Any broken insulator found in the line				
56	Surface finish and painting on Steel tubular pole/RSJ/H Pole/Rail pole				
57	Adequate tree cutting on either side of line done				
58	Pole to pole schedule enclosed with proforma				
59	Pole numbering with "DDUGJY " inscription not done (properly)				
60	Engraving of poles (Name of Manufacturer, SL Nos etc.) not done				
61	Line Spacers not used				
62	Guy insulator not used in stay wire				
63	Inadequate length of barbed wire				

LT Domestic Service connection to BPL

S. No	Description	Status (Yes/No)	Observations	Location	Picture No.
1	Approximate length of service line taken from nearby LT pole/Distribution Board/Distribution box				
2	Following materials are provided in the premises of consumer:				
A	Energy meter				
B	Metal meter box				
C	Double pole miniature circuit breaker				
D	Meter board				
E	Earthing point				
F	LED lamp				
3	The consumer meter has been tested at distribution licensee's test laboratory,				
4	The size of service cable is 2.5 mm ² twin core (unarmoured) PVC insulated cables with aluminium conductors				
5	Service cable is free of joints				
6	The size of the bearer wire is 3.15 mm (10 SWG) GI wire (55-95 kg. quality)				
7	Suitable meter board has been installed as per specification				
8	Suitable Switch Board has been installed (as per specification)				
9	Single phase Energy meter is installed as per specification with acrylic cover				
10	Type and size of PVC pipe/GI pipe support as per specification				
11	Proper ground clearance of service line as per the guidelines				
12	GI pipe/MS angle (35mmx35mmx5mm) clamped firmly using 40x3mm MS flat clamps at at-least two locations				
13	Use of GI Medium Class pipe as per specification				
14	Use of double pole miniature circuit breaker as per specification				
15	Meter box for single phase meter made provided for meter protection of the specified dimensions				
16	Reel Insulator are provided as per requirements				
17	Egg Insulator as per requirements				
18	Protection and Earthing as per specification and CEA regulations has been provided at consumer premises				
19	Each BPL Household has been provided with internal house wiring and accessories between switch board and Angle Holder as per specifications				

20	All the construction activities related to power supply in the households have been performed as per REC construction standards.				
21	Wattage of LED lamp provided at consumer premises				
22	Type of holder used for LED lamp				
23	Following ISI marked internal electrification material in consumer premises:				
a	5A socket				
b	5A 3 pin piano type switch				
c	5A pendant holders				
24	Type and size of following boards:				
a	Switch board				
b	Meter board				
25	Height of switch board in consumer premises				
26	Protection from direct sunlight and rain water to meter box at consumer premises				
27	Proper tensioning of service cable at consumer premises				

Checklist for inspection of REDB (Substation)

S.N.	Description	Status (Yes/No)	Observation	Picture No.	Location as per SLD
1	Major Materials (CT/PT/CB/X'mer/Battery/ Panels /Structures/Conductor) as per specifications				
2	Record S. No., make and year of manufacturing of Power transformer				
3	Major Materials dispatched without inspection				
4	Construction as per Approved Drawing				
5	Civil works FQP documentation maintained during construction				
6	Equipment (name it) provided in the BOQ/ drawing but not installed				
7	Verification of pre-commissioning and commissioning testes of substation equipment i.e. Circuit Breaker, CT, PT, transformer, Charger, Battery, Relays, Control Panels, Switchgear, 11 KV cable etc				
8	Present condition of main equipment				
9	Functional Status of Transformer: WTI, OTI etc, Relays, Battery Charger, Battery, CB, CT, PT, Energy Meter, Control & Relay panel				
10	Transformer oil tested				
11	Transformer Relays, CT, PT , CB , Switchgears, battery sets, etc charged after test				
12	Equipment charged after commissioning test				
13	Gravel size proper				
14	Earthing of main equipment, fence etc done properly				
15	Sub Station fencing provided				
16	Cable trench made with cable trays – or cables lying on trench floor				
17	Whether Cable trenches have suitable slope to ensure automatic draining of rainwater				
18	Proper storage of equipment				
19	Cables tied on cable trays				
20	Glands, lugs used (wherever need - at cable entries)				
21	Dead end marking for cables is done				
22	Earth mat provided				
23	Undersized conductor/ cables used				
24	Correct size of earthing conductor - flats, GI wires etc used				
25	Acid proof floor used in battery room				
26	Fasteners (nut, bolts, clamps connectors, hardwaresetc) as per specification				
27	Switchgear rubber mats, chequer plates not provided				
28	FQP for material receipt and storage maintained by PIA				
29	Name of Feeder on Control Panel.				

30	Name of Feeder on Outgoing DP structure				
31	Working platform on 33 KV and 11 KV outdoor VCB				
32	Name of Substation board on the entrances				
33	Painting of control room, water supply position in Substation				
34	General sanitation arrangement in the control room building				
35	Internal Lighting in the substation control room				
36	Closed fencing of the substation yard				
37	Approach road to Power Transformer foundation				
38	Water logging/ Earth filling in the yard trench				
39	Partition wall between two Power Transformers				
40	Availability of Earthing Rod in the substation				
41	Availability of Permit & Work Book				
42	Tracing of Earth connection of Power/ Distribution Transformer up to Earth Pit				
43	Connection at Earth Pit				
44	Jointing & Clamping of Earth Conductors				
45	All Terminal Blocks at CTs/PTs/Breaker/Panels/Junction Box				
46	Earthing& Fencing is as per specification				
47	Cable trench cover inside the control room and in the yard.				
48	Exhaust Fan in the Battery Room				
49	Inter Battery connections				
50	Battery Charger connection				
51	Earthing of Control Panel				
52	Termination of power cables at 11 KV sides/LT sides of Power and Station Transformer.				
53	Inside pic of distribution board of station transformer				
54	Take Overall picture of station transformer				
55	Connection of Lightning arrestor				
56	Approximate clearance of live part in the substation				
57	Oil leakage in Power/Station Transformer				
58	Area lighting in the substation				
59	Material diagram of substation in the control room				
60	List of authorized operational personnel in the substation				
61	Connection at the bus-bar jumpers				
62	Loop cables LT/HT/Control				
63	Tagging on cable terminals				
64	Work clearance on control panels and sufficient lightening on the control panel				

Annexure-III

(Verification of Quantity of Materials)

Quantity of Material

(Verification w.r.t. sanctioned BOQ – refer Item No. 9 of village inspection report)

Distribution Transformer

Sr. No.	Description as per LoA	Unit	As per BOQ/LOA Awarded by PIA	Verification done by NQM	Variation in Quantity	Category of Defect (Critical/Major/Minor)	Remarks
1.	Distribution Transformer 3 phase/1 phase	No.				Critical	
2.	Lightening arrester	Set				Major	
3.	AB/GO Switch 11kV	Set				Major	
4.	H G Fuse / DO fuse 11kV	Set				Major	
5.	Poles (all sizes)	No.					
6.	Distribution Box	No.				Major	
7	Energy Meter	No.				Major	
8	Pipe earthing	No.				Major	
9	11 kv strain set with Disc Insulators	No.				Major	
10	11kv pin Insulators	No.				Minor	
11	HT Stay set	Set				Minor	
12	HT Earthing set	Set.				Major	
13	Danger boards	No.				Minor	
14	L.T. PVC Cable (all sizes)	Mtr.				Minor	
15	PG Clamp	No.				Minor	
16	M S Channel (all sizes)	No.				Minor	
17	M S/GI flats (all sizes)	No.				Minor	

Definition:**Critical:** 1. If number of Quantity is less than BOQ**Major:** 1. If no. quantity installed is more than BOQ or Drawings

2. If items from S.No. 2- 9 are less than BOQ

Minor: 1. If sought out items are short wrt drawings

11 KV LINE(1phase/3phase)

Sr. No.	Description as per LoA	Unit	As per BOQ/LOA Awarded PIA	Verification done by NQM	Variation in Quantity	Category of Defect (Critical/Major/Minor)	Remarks
1.	Poles (all sizes)	No.					
2.	RSJ Girder	No.					
3	DP Structure	No.					
4	Line Length	C.Km.				Critical if undersized conductor used.	
5	11 KV disc insulator with hardware	No.				Major	
6	H.T. Stay Sets.	No.				Minor	
7.	HT Guy Insulator	No.				Minor	

Type of Conductor:

***Note:-Shortage of the materials would fall under Quality of Workmanship**

LT LINE

Sr. No.	Description as per LoA	Unit	As per BOQ /LOA Awarded PIA	Verification done by NQM	Variation in Quantity	Category of Defect (Critical/Major/Minor)	Remarks
1.	Poles (all types)	No.					
2.	LT Line length	C. Km				Critical if undersized	
3	LT Conductor / Cable (3-Phase)	C. Km				Critical if undersized	
4.	Jointing sleeves for ACC	No.				Minor	
5.	L.T. Earthing Set	No.				Minor	
6.	L.T. stay Sets.	No.				Minor	
7.	L.T. guy insulators	No				Minor	

***Note:-Shortage of the materials would fall under Quality of Workmanship**

Annexure-IV

Comments on

RQM/TPIA Inspection

Reports

Format for Comments on TPIA/RQM reports

Name of State:

Name of Project:

Name of Village/habitation:

Date of inspection by RQM:

Date of inspection by NQM:

Date of inspection by TPIA:

Name of the material/ equipment	Unit	As per latest DPR/RCE / approved BOQ/As built drawing	Quantity Verified by TPIA	Quantity Verified by RQM	Quantity Verified by NQM	Deviation/ Remarks if, any
I. Major physical quantities						
1	BPL Households	No.				
2	Distribution Transformer with Serial No.	No./ each KVA				
3	33 KV / 11 KV circuit Length	Km.				
4	LT circuit Length	Km.				
5	No. of Poles	Nos.				

Sr. No.	Description of Defects (Pic no. & Location)	RQM Comments	TPIA Comments	NQM Comments	Attended by PIA Yes/No	Remarks
1.						
2.						
3.						
4.						
5.						
6.						
7						
8						
9						

10						
11						
12						
13						
14						

Avg. Hrs of Supply as per RQM:

Avg. Hrs of Supply as per NQM:

Avg. Hrs of Supply as per TPIA:

General observation:-

Annexure-V

List of BPL & APL

Beneficiaries Certified

by

Authorized Signatory

Village-wise BPL beneficiary details under RGGVY Schemes

AEN (O&M), Virat Nagar

S. No.	Name of BPL Consumer	Gram Panchayat	Name of Village	Village Cencus code	BPL Card No.	Meter No.	SCO No.	Date of connection released	Whether SC/ST	Remarks
1	Girraj singh/ Chitar singh	Kuhada	Bandh Mujaffarpur	1462800	8980267	9955441	6859/16	10.11.10		
2	Sumer singh/ Mangu singh				8980273	9247980	6859/17	19.11.10		
3	Matadin singh/ Bheru singh				8980274	9248027	6859/18	13.11.10		

Executive Engineer (O&M)
J. V. V. N. L. SHAHPURA (JALPURA)

Annexure-VI

(Verification of BPL& APL Connections)

(Inspecting Engineer)

Verification of BPL Connections

S. No.	Consumer Name	Father's Name	Consumer No.	BPL Card No.	Meter no.	Date of connection	Category (SC/ST/Other)	Whether Connection provided (Y / N)	Connected Load (Actually used by BPL)	Remarks / Observations

Verification of APL Connections – Part I (Connections Released)

S. No.	Consumer Name	Father's Name	Consumer No.	Meter no.	Date of connection	Category (SC/ST/Other)	Whether Connection provided (Y / N)	Connected Load (Actually used by APL)	Whether DDUGJY Beneficiary (Y/N)	Remarks / Observations

Verification of APL Connections – Part II

No. of APL HHs applied for connection	No. of connections released to APL HH	No. of APLs not willing to avail connection	Reason for APL HHs not availing connection

Seal and Signature:

Name:

Designation

Date:

Annexure-VII

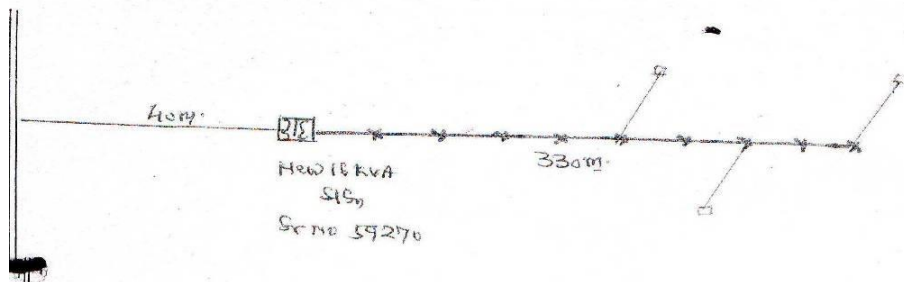
Single Line Diagram

Approved by PIA

Pole Schedule of work done in RGGVY Scheme under TN-174 (Lot- 5)

P.S. - **VARAT-HAGGA Panchayat - KUHADA**

Village **BAND MUJPAR** Dhani
PUR



Material Used

Name of material	Qty. utilized	Name of material	Qty. utilized
9 Mtr. pole	1	armoured XLPE cable 2x2.5 Sq. mm	78m.
8 Mtr. pole	9	AC static meters single phase	3
11 KV Top Hamper with clamp (GI)	1	GI angle 1.33 m long with 2 Nos. GI bolts 16x125	2
11 KV porcelain pin insulator with pins	-	GI nut & bolt (assorted size)	99
11 KV T&C type porcelain disc insulator with H/W	2	Earthing of line 1 Rod 20 mm dia 3 M long	1
LT Porcelain pin insulator with pin	-	GI wire 8 SWG	319
LT porcelain shackle insulator with H/W	2	GI wire 10 SWG	419
LT stay set complete with guy insulator & stay wire 7/10 SWG	3	LT cross arm 2' long with clamp (GI)	-
ACSR Weasel conductor	83m	11 KV bracket dead end point with clamp (GI)	1
6.35/0.24 KV S/S Structure	1	11 KV bracket T OFF pointwith clamp (GI)	1
16 KVA Transformer single phase	1	Guard Bracket with clamp (GI)	-
11 KV drop out fuse single phase	1	BPL Kit consist of (1 No. Kit Kat Fuse, Tumber switch, Holder, MCB, 3.75m PVC Wire, Teak wood board)	3
PG clamps for Weasel conductor	4	14 W ISI Mark CFLs	3
AB Cable 1cX25+25 Sq. mm	345m	16 mm GI Rod for Earthing 2 M long with Nuts & Bolts	3
Suspension clamp with eye hook & accessories for 8M pole	8	GI Stay clamp for 9 mtr. Pole	1
Dead end clamp with eye hook & accessories for 8M pole	1	GI Stay clamp for 8 mtr. Pole	2
Piercing connector 'A' type	6	Dead end clamp with eye hook & accessories for 9M pole	1
Piercing connector 'B' type	2	No. of BPL connection released	3
3 nos earthing made of 20 mm dia MS Rod	1		

For Handed over by

Authorised Signature

कनिष्ठ अभियन्ता
जयपुर विभाग

Taken over by

सहायक अभियन्ता (मे. एण्ड एम.)
जयपुर विभाग, निराकरण
Executive Engineer (O & V)
Ttd: SHAHPURA

Annexure-VIII

Single Line Diagram

Of Actual

Infrastructure verified

by NQM/RQM

Annexure-IX
GPS Points
Superimposed on
Google Earth

Block Name-Virat Nagar
Code- 0002

Village Name-Band Mujaffar
Census Code:-1462800



Annexure-X
(Photographs
Describing Defects)

District:

Block:

Village:



1. Very loose Nut – nut almost hanging on the bolt
2. Clamp size is short
3. Spring washer is not used

District:

Block:

Village:



1. Arcing horns are disfigured

Annexure-XI
(Group Photograph of
inspectors with
villagers)

Annexure-XII
(Copy of Handover
Certificate)

DAKSHIN HARYANA BIJLI VITRAN NIGAM LIMITED

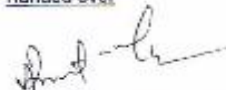
Handover and taken over Certificate

1. Name of work :- BPL BENEFICIARY RGGVY WORKS
2. Feeder Name :-
3. Village Name :- Gadhla
4. Sub-Division :- Pahlawas
5. Division :- Rewari
6. District :- Rewari
7. Circle :- Faridabad

8.P.O. NO& Date :- PD&C/162/SE/P&D/TED-86/2008 dated- 21.11.2008
PD&C/163/SE/P&D/TED-86/2008 dated- 21.11.2008

The BPL beneficiary connection under RGGVY work of above mentioned Village has been successfully completed by M/s.Aravali Infra Power LTD. As per the specifications/orders and enclosed statement (Annexure-A,B,C) All work as per approved scheme have been commissioned.

Handed over



Authorized Contractor's representative

Taken over

Authorized Nigam's Representative

JEN (Works)


JEN (Operation)

SDO (Works)

SDO (Operation)



Copy to the following Or favour information and necessary action

1. Superintending Engineer (Works), DHBVN, Faridabad
2. Superintending Engineer (Operation), DHBVN, Narnaul
- 3.D.G.M. (Works), DHBVN, Rewari
- 4.D.G.M. (Operation), DHBVN, Rewari


SDO/CORST., SUB DIV.
DHBVN, REWARI

Annexure-XIII
(Copy of Gram
Panchayat Certificate)

CERTIFICATE

It is certified that:-

The following revenue villages (as per census 2001) have been electrified as per the new definition of village electrification issued by Ministry of Power, Government of India vide their letter No. 42/1/2001-D(RE) dated 6th February 2004 and its corrigendum vide letter no. 42/1/2001-D(RE) dated 17th February 2004.

Each of these villages has been electrified as per following:-

- (i). Basic infrastructure such as Distribution Transformer and Distribution lines are provided in the inhabited locality as well as the Dalt Basti/hamlet where these exist.
- (ii). Electricity is provided to public places like Schools, Panchayat Office, Health Centre, Dispensaries, Community centers etc.
- (iii). The number of households electrified is not less than 10% of the total number of households in the village.
- (iv). The villages are revenue villages and have been duly identified by their corresponding census (2001) code number.

Sl. No.	Name of Revenue village	Census Code Number (2001)	Name of Panchayat	State	District	Block	Date of Electrification
1	2	3	4	5	6	7	8
	Dorani		Dorani	Madhya Pradesh			

(Signature of Authorised officer)

Name of officer

Designation

Name of Panchayat

Date

Official Seal

(Signature of Authorised officer)

Name of officer

Designation

Name of State Power Utility

Date

Official Seal

Witness No. 1 (Panchayat member other than signatory)

Witness No. 2 (State Power Utility officer other than signatory)

Witness No. 3 (Domestic consumer of the village)

SDO, Const. Divn.
D.H.B.V.N. Bhiwani

Laema S.P.U. Surja

Annexure-XIV
(Copy of Test Reports
of Major Materials)

Annexure-XV

Structure

PMS/Manpower

Deployed

Annexure-XVI
Major deviations from
SBD/XII Plan
Guidelines

Library
Of
Picture of Defects



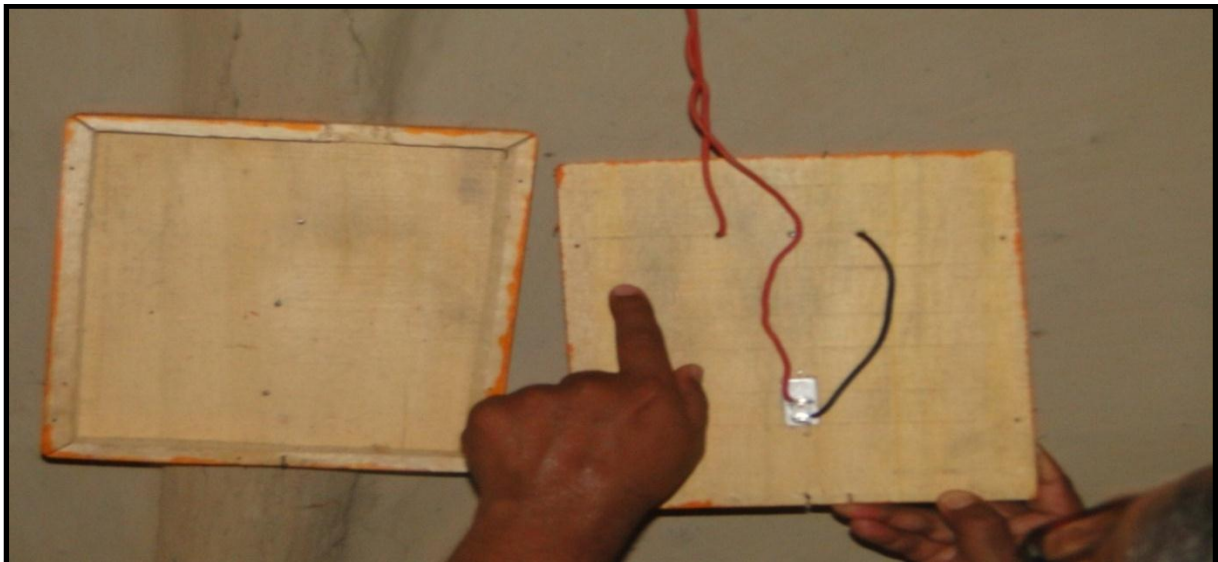
1. Danger board is not clamped
2. Bad quality of Pole – internal earth wire is exposed
3. Honey combs present in pole concrete



1. Thimble is not provided at the stay



1. Sign board not as per DDUGJY guidelines



1. Poor quality of BPL service board



1. Spring washers are not provided
2. Under size bolts are used
3. Nuts not tightened properly
4. Cotter pin is not used



1. Flex board is used instead of painted board
2. DDUGJY sign board is rusted



1. Jumper has multiple joints
2. Jumper is used with 2 piece wire instead of single wire
3. PG clamps are not used



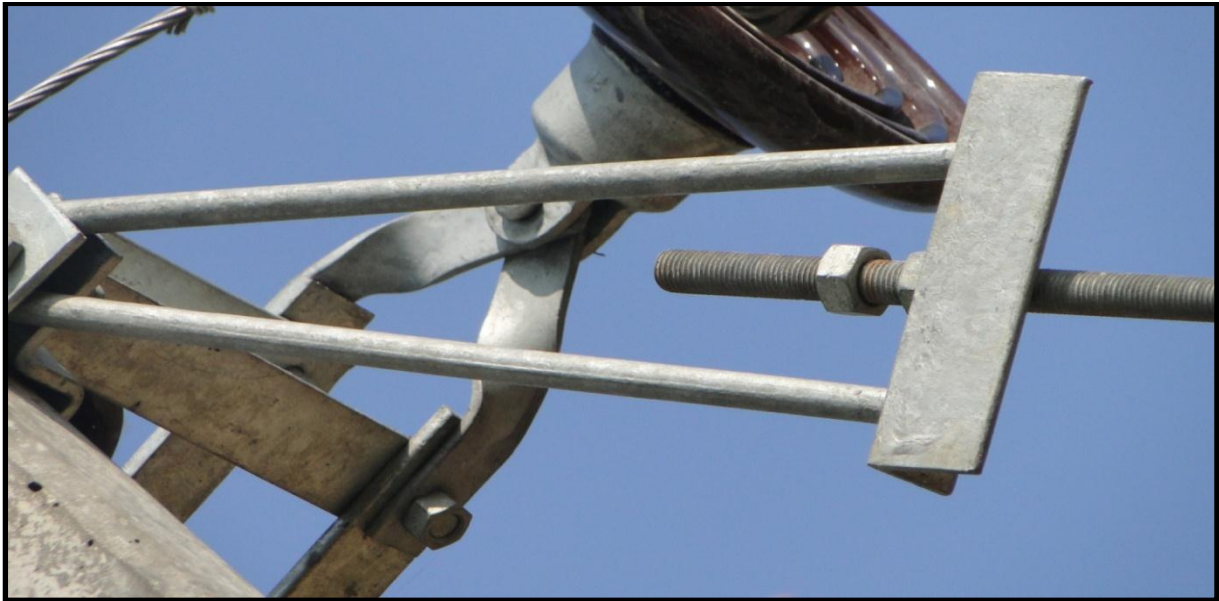
1. PG clamps are not used in jumper
2. Multiple conductors are used for jumper
3. Nuts are loose
4. Under size bolts are used
5. Spring Washers are not provided



1. Undersized Bolts are used
2. Spring washers are not provided



1. Eye bolt is not provided for the guard wire



1. Nut is not tightened properly on the stay set
2. Spring washers are not provided
3. Under size bolt is used



1. Spring washer is not provided
2. Wrong bolt used - threads in place of shank is used
3. Clamp is under sized



1. Clamps not tightened in same plane – Bolt head is making point contact rather than surface contact
2. Spring Washer is not used
3. Under sized bolt is used - Nut can not take full thread



1. Cotter pin is not used
2. Angle and nuts are rusted
3. Spring washer is not provided



1. Clamps are not fixed properly
2. Nuts are not tightened
3. Spring washers are not provided



1. Transformer not placed properly
2. Nuts are loose
3. Under sized bolts are used
4. Spring washers are not used



1. Very loose Nut – nut almost hanging on the bolt
2. Clamp size is short
3. Spring washer is not used



1. Arcing horns are disfigured



1. Low oil-level in distribution transformer



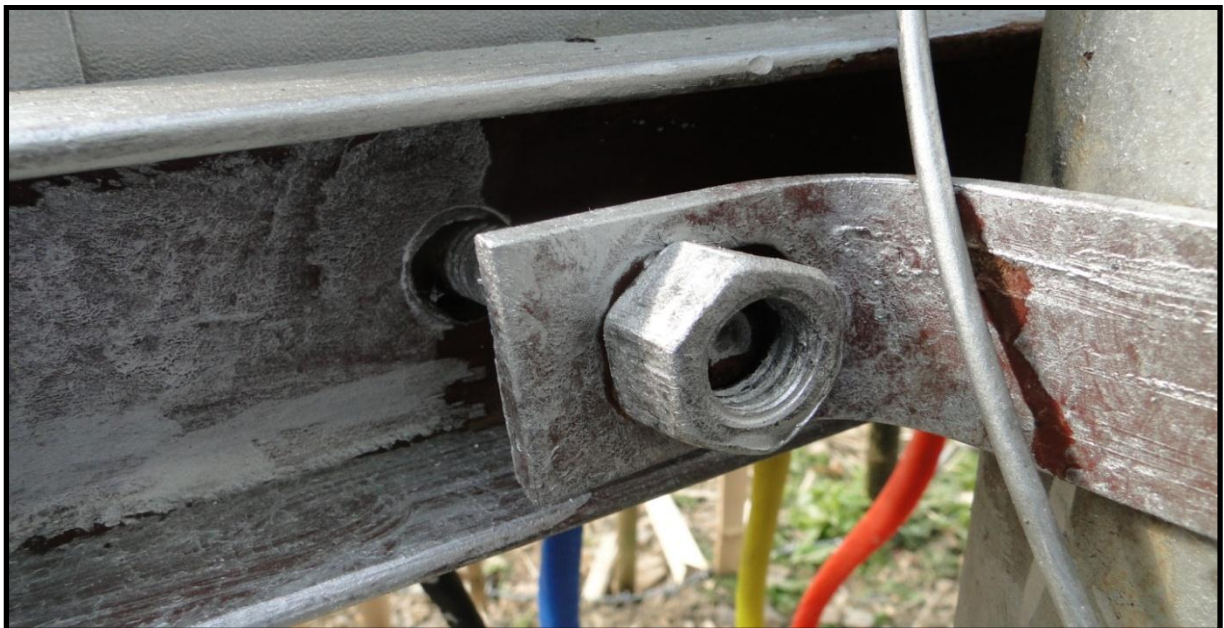
1. Danger board is not clamped
2. Earth wire is loose



1. Clamp is not fixed properly
2. Improper size of clamp is used
3. Bolt not fixed in correct position
4. Spring washer is not used



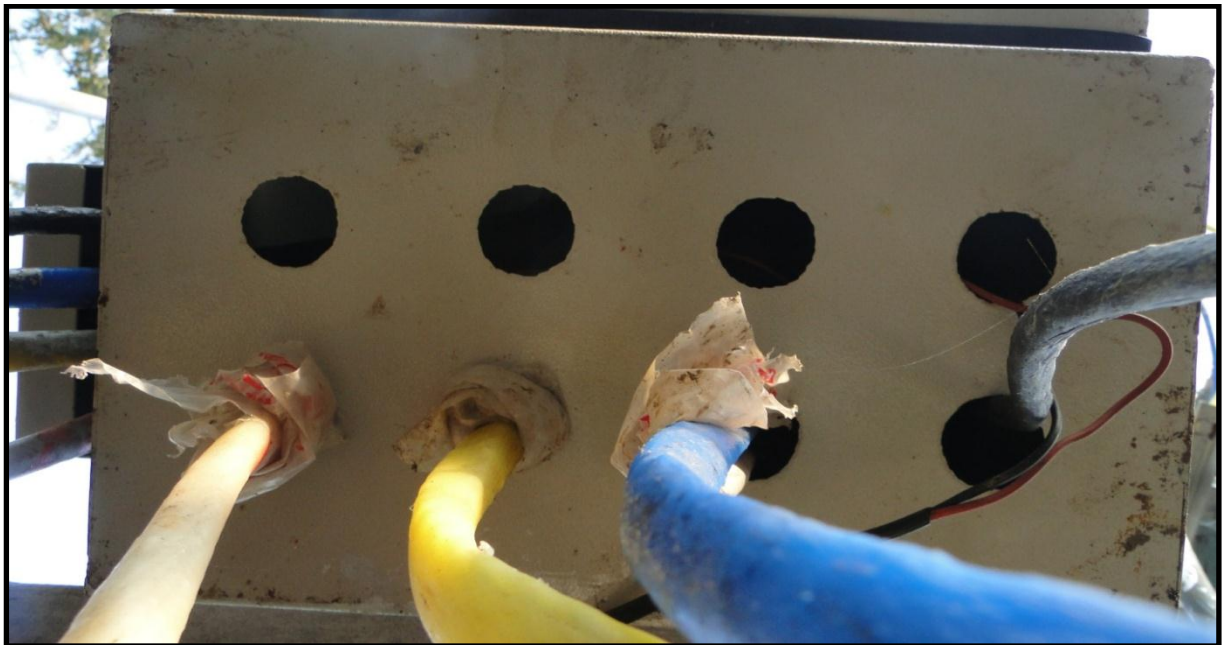
1. Danger board is not clamped



1. Nut is loose – almost hanging on the bolt
2. Spring washer is not provided
3. Under sized clamp is used
4. The quality of painting is inferior



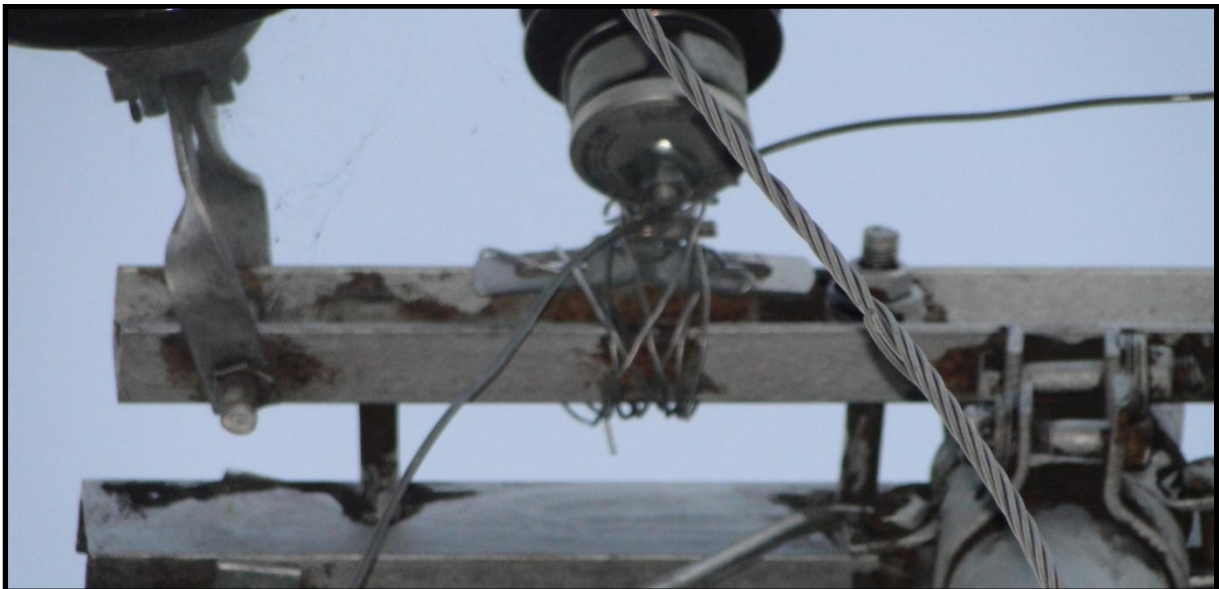
1. Cable not crimped properly – pressed with pliers rather than cramping tool



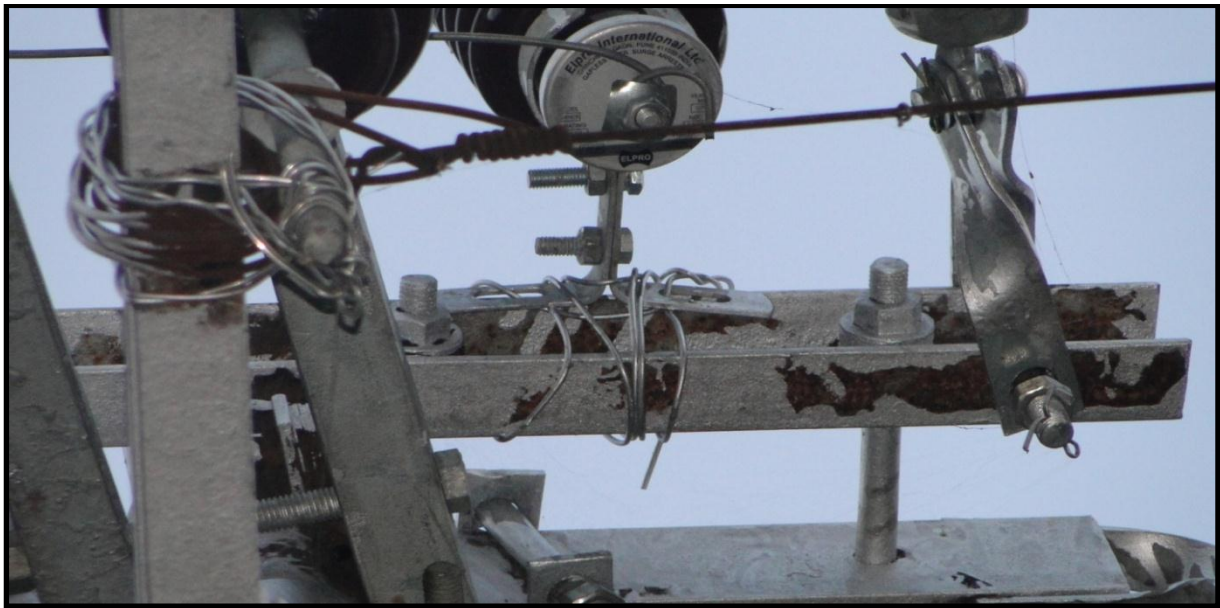
1. Cable glands are not used



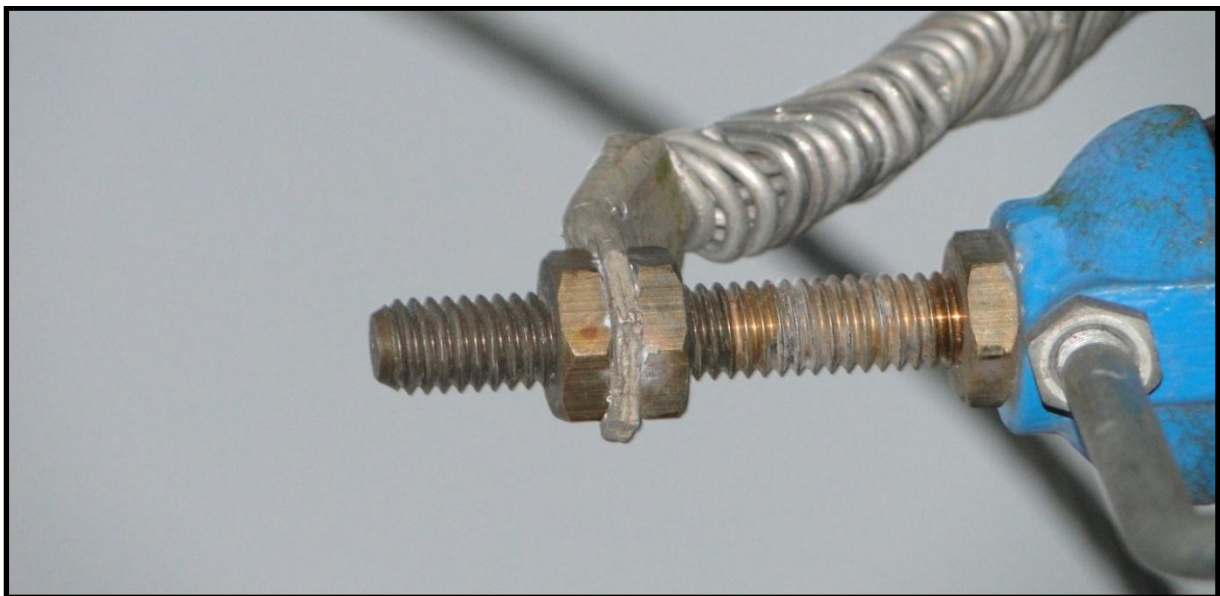
1. Transformer is placed on the channel without using nuts and bolts
2. The bottom of transformer is rusted



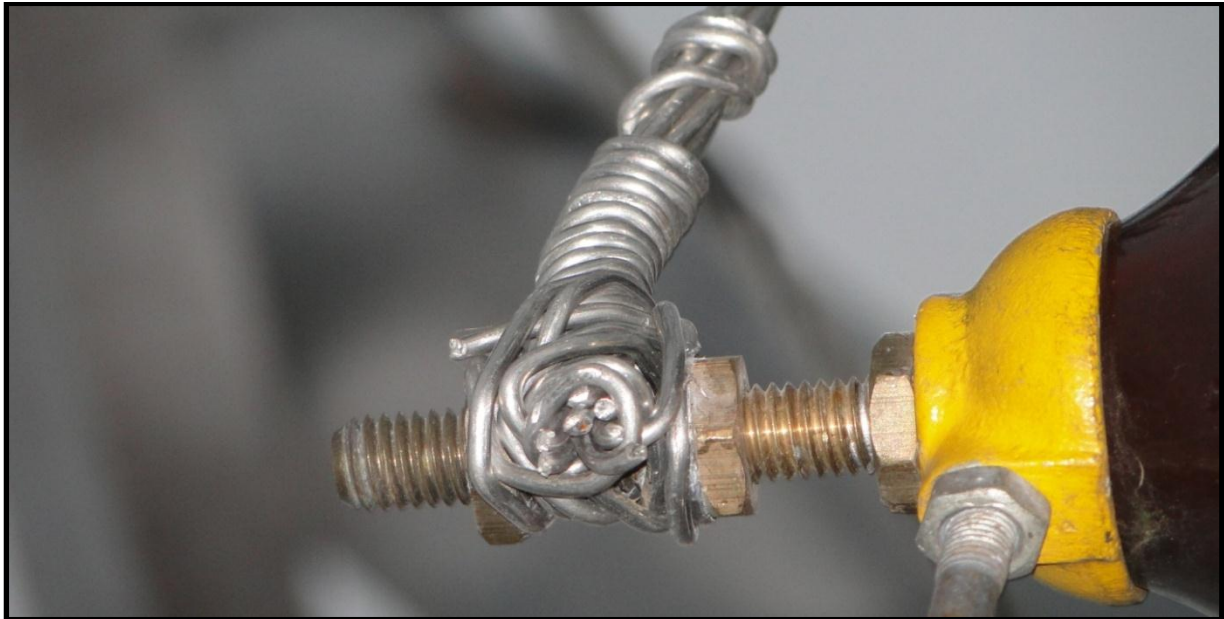
1. LA installed with loose wire (clamps and nut bolts not used)
2. The quality of painting is inferior



1. LA is not connected properly
2. Over sized nuts are used on LA (lack of quality control on nuts & bolts)
3. The quality of painting is inferior



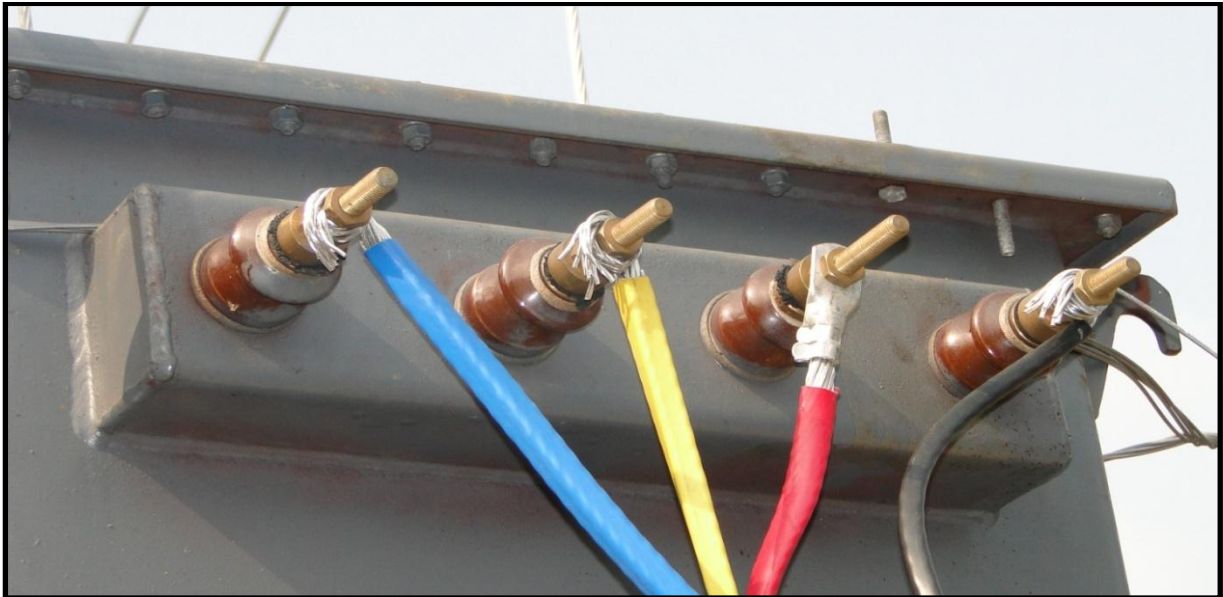
1. Lugs has not been crimped on the conductor - the conductor wrapped up on lug with wire



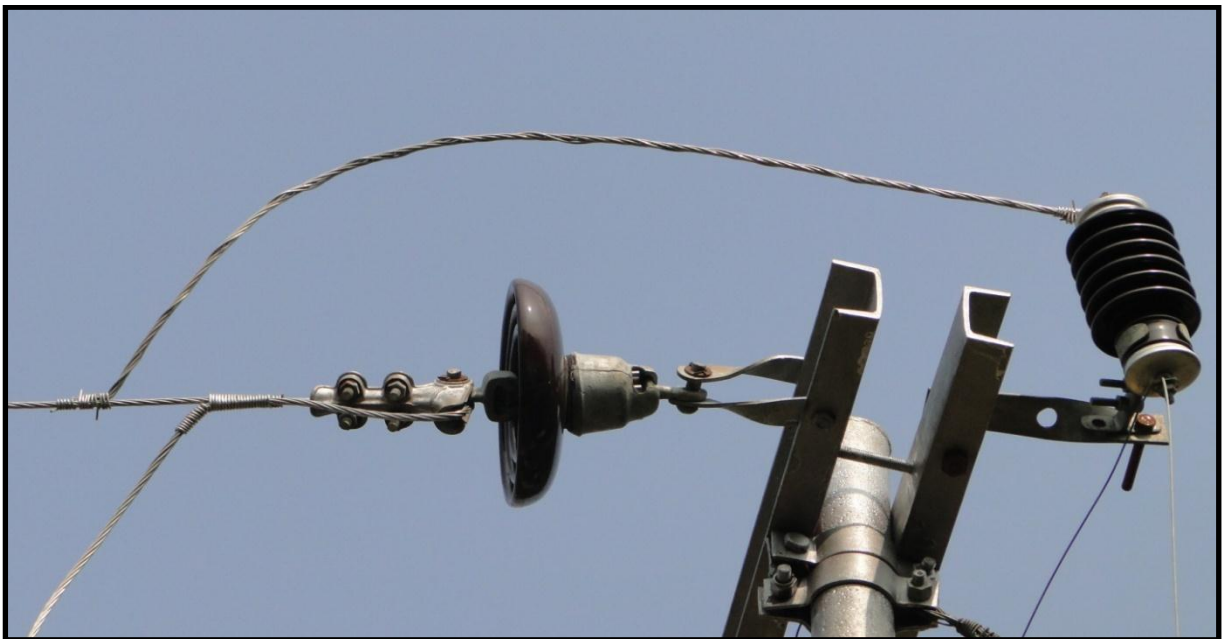
1. Lug is not crimped on the conductor-the conductor wrapped up on lug with wire



1. Make shift distribution board is used



1. Wires not crimped on transformer terminal
2. Wires not connected properly(resulting in loose connections)



1. Few strands of wire used on LA jumper
2. Jumper is not terminated properly on conductor
3. Undersized earthing wire is used for LA
4. Earthing wire is not dressed



1. Excess number of washers are used(incorrect bolt size used)
2. Under size clamp is used
3. Heavily rusted pole and clamp is used
4. Earth wire is loose



1. Heavily rusted pole is used(improper storage)



1. Single strand is used for LA jumper
2. Earthing wire is not dressed



1. LA jumpers are provided with single strand of wire



1. The quality of pole is inferior



1. Clamps are not fixed properly
2. Spring washer is not provided
3. Nuts are loose
4. Heavily rusted clamps and channels are used
5. Improper size of clamp is used



1. Installation of poles not done properly - defective foundation
2. Pole to pole distance is short
3. Earth wire is not dressed



1. Oil leakage in transformer
2. Transformer is not mounted properly- No nuts and bolts used
3. Heavily rusted channel is used
4. Inappropriate bolts are used



1. Hole created by welding rod - pre fabricated channel not used
2. Poor quality of nut and bolt



1. Transformer not mounted properly- No nuts and bolts used
2. Hole created by welding rod - pre fabricated channel not used
3. Channel is rusted
4. Plane washer is used instead of spring washer



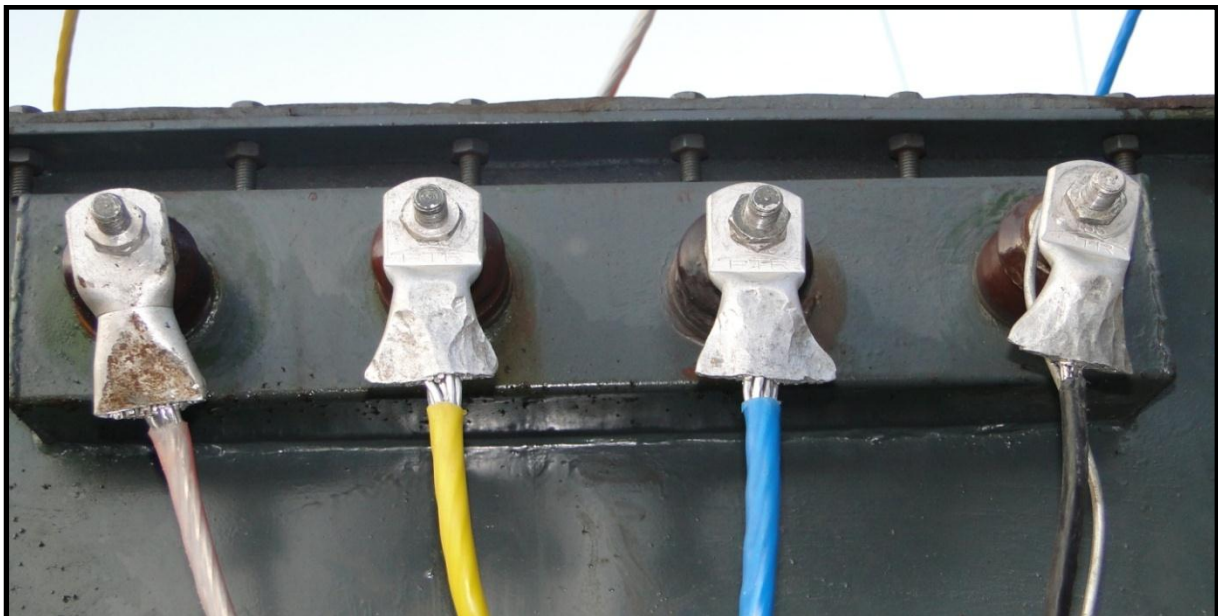
1. Oil leakage in transformer
2. Channel is rusted
3. Transformer is mounted using loose wire instead of nuts and bolts



1. Inferior quality of distribution box is used
2. Cable glands not provided in distribution box
3. Distribution box is rusted
4. Concreting is not done properly



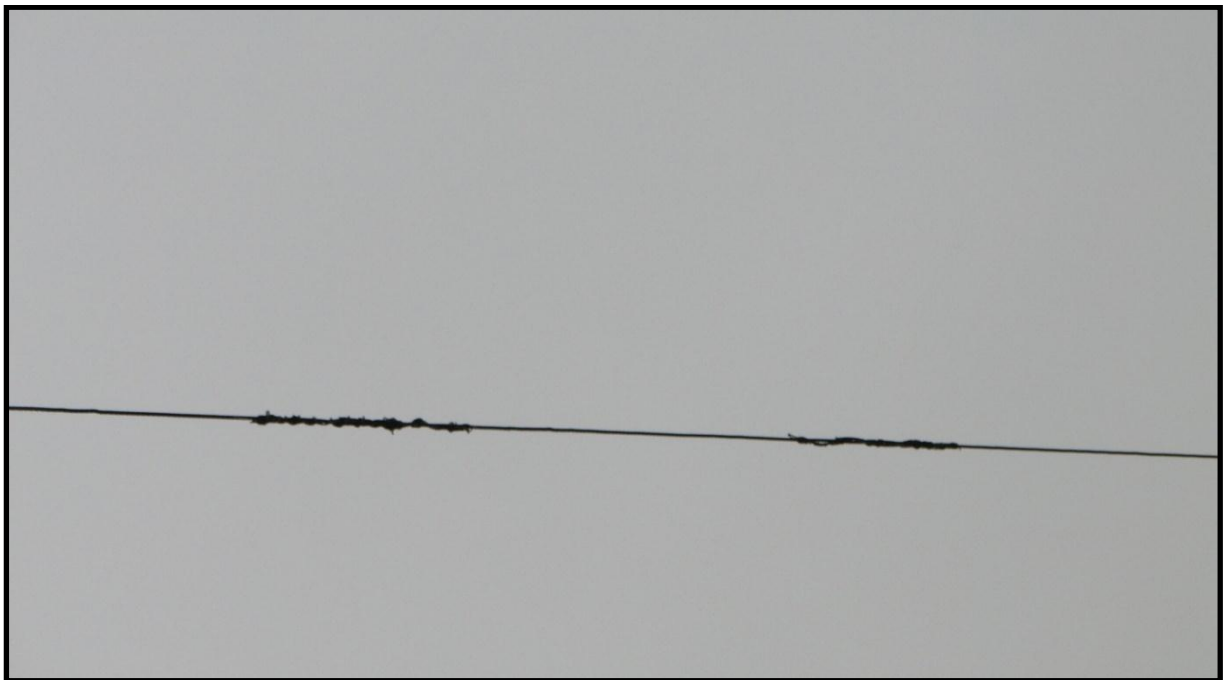
1. Incorrect format of board used – not as per DDUGJY guidelines
2. Incorrect photograph of Shri Rajiv Gandhi
3. Defacing of board due to rust – poor quality of paint is used



1. Wires are not crimped properly – crimping tool not used
2. Cables are not connected properly with transformer terminal



1. Incorrect danger board used
2. Danger board not fixed properly



1. Multiple joints in one span
2. Joint is not as per standard practice



1. Loose jumper connection – PG Clamp not used
2. Jumper is too long



1. Pole installed without foundation
2. Under size earth wire is used
3. Improper dressing of earth wire



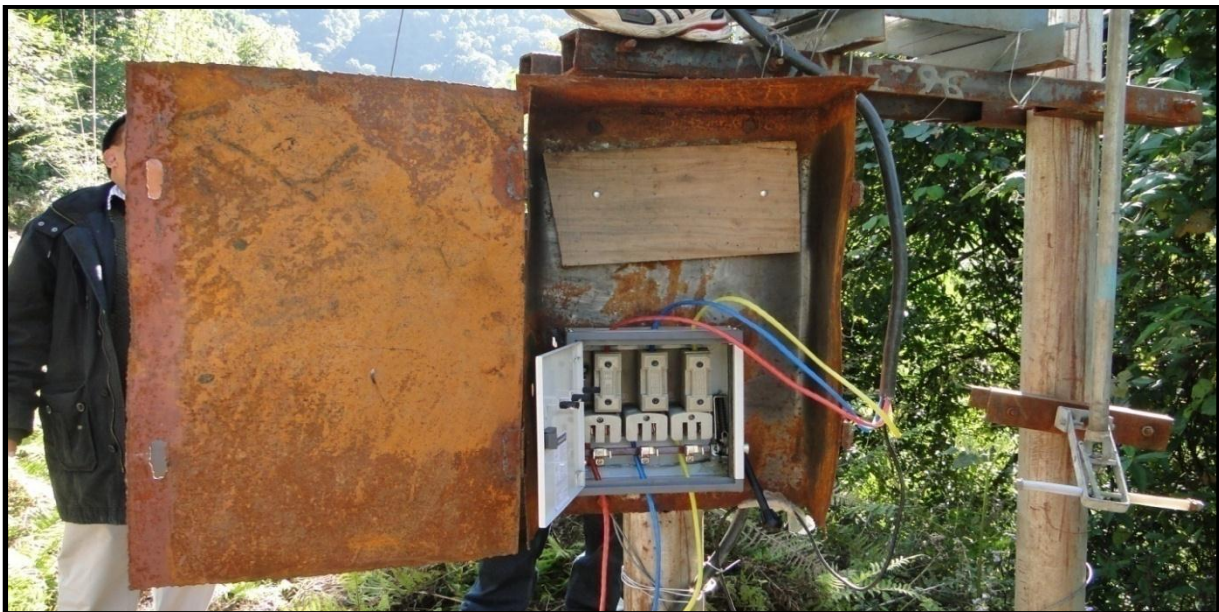
1. LAs are not connected
2. LAs are not mounted properly
3. Earthing wire is not dressed
4. PG clamps are not used



1. Hole created by welding rod - pre fabricated channel not used
2. Heavily rusted channel is used
3. Inappropriate size of channel is used
4. Poor quality of nuts and bolts



1. Conductor is not mounted on top groove
2. Clamps and bolts are rusted
3. No nuts and washers provided



1. Poor quality of Distribution box used
2. Make shift box used
3. Rusting of box and channels
4. Improper connections of phase wires
5. AB switch operating rod not installed properly



1. Transformer fixed without bolts
2. Rusted channel is used
3. Spring washers are not used



1. Distribution board not earthed



1. Transformer not mounted properly- No nuts and bolts used



1. Poor quality of welding



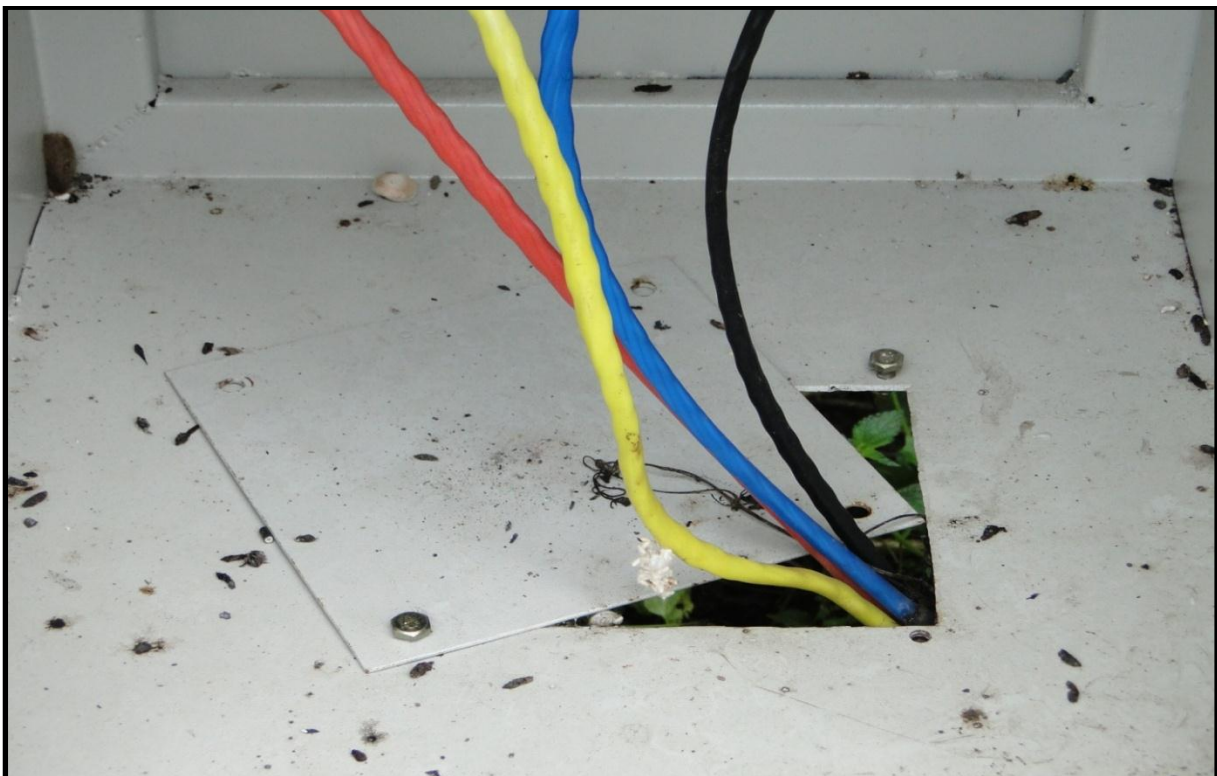
1. Improper size of clamp is provided
2. Improper size of nut and bolt



1. Poor quality of paint resulting uneven surface
2. Poor quality of channel used (heavily rusted)



1. Channel fabricated using short pieces with multiple joints
2. Hole created by welding rod - pre fabricated channel not used
3. Holes created by welding are not proper



1. Glands are not used
2. Gland hole not provided in bottom plate



1. Bamboo is used instead of channel
2. Heavily rusted channel and poles are used
3. Earth wire not dressed properly
4. Distribution box installed at very low height
5. Washers are not provided



1. Concreting is not done properly
2. Honey combs are present in concrete
3. Earth wire is not dressed properly



1. Rusting of clamps, nuts and bolts
2. Spring washer is not provided
3. Earth wire is not dressed properly



1. Inappropriate size of clamp is used
2. Rusting of clamps, bolts and channels
3. Bolts are not fixed in correct position
4. Nuts are not provided



1. Channels and angles are severely rusted
2. Spring washers are not provided
3. Poor quality of paint on transformer surface



1. Channel is heavily rusted
2. Spring washers are not provided



1. Pipe earth is not installed with proper depth
2. Earthing clamp not used
3. Under size(thin) earth wire is used



1. Poor storage - Transformers and other materials are stored on muddy surface



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