ELECTRICAL SAFETY INSPECTION REPORT

GREEN TEXTILE LIMITED (UNIT-3)_EXPANSION.

Nijhuri, Baraid Bazar, Valuka, Mymensingh.

GPS Coordinates: 24.44591961, 90.33818680

Factory List: 1. GREEN TEXTILE LIMITED (UNIT-1) (12216)

2. GREEN TEXTILE LIMITED (UNIT-2) (23596)

3. GREEN TEXTILE LIMITED (UNIT-3) (23597)

4. GREEN TEXTILE LIMITED (UNIT-3)_EXPANSION (24526)

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Reviewed by : Banna Kasemi
Approved by : Banna Kasemi

Inspected on: **May 24, 2023**

RSC RMG SUSTAINABILITY COUNCIL

ELECTRICAL SAFETY INSPECTION REPORT
GREEN TEXTILE LIMITED (UNIT-3)_EXPANSION.

Address: Nijhuri, Baraid Bazar, Valuka, Mymensingh.

1. INTRODUCTION

The Factory was surveyed for electrical safety by RMG Sustainability Council. The purpose of the survey was to identify significant electrical safety issues and to provide recommendations for remediation based on applicable standards specified by the RSC.

Electrical Safety Audit is a methodical approach to evaluate potential electrical hazards and to recommend suggestions for improvement. The scope of this initial electrical safety inspection was limited to the review and identification of major electrical safety issues. The inspection did not include identification of minor deficiencies, which would be further dealt with as part of follow-up inspections.

2. LIMITATIONS

The information in this electrical safety inspection report was obtained during a visit to the facility and during discussion with local factory management. Services performed by the auditors are conducted in a manner consistent with that level of care and skill generally exercised by members of the engineering and auditing profession. However, an effort has made to discover all meaningful areas under the stipulated time available.

In evaluating subject site, Inspector relies in good faith on information provided by factory management or employees. The Inspector assumes that the information provided is factual, accurate and accepts no responsibility for any deficiency, misstatement or inaccuracies contained in this report as a result of omission or misrepresentation of any person interviewed or contacted.

The findings and recommendations in this report are not intended to imply, guarantee, ensure or warrant compliance with any government regulations. Additionally, the results do not imply in any way that compliance with the findings or recommendations as stated in this report will eliminate all risks or exposures not referred to in this report do not exist. Compliance with the findings and recommendations stated in this report does not relieve the factory owner from obligation to comply with specific project requirements, industry standards, or the provisions of any local government regulations.

3. DEFINITION

3.1. TIME FRAME

The amount of time being allocated based on the remediation work volume of the electrical issues considering the feasibility and ideal status of materials, capital and working condition. Criticality and priority level of the issue is not taken into consideration. It is bound only for the particular finding unless mentioned ‘typical’, shall include the whole typical findings.

3.2. PRIORITY LEVEL

3.2.1. Electrical issues related to code violation and/or non-conformity with codes possessing immediate fire hazard, direct threat to human safety, shall be considered as **P1** Level of priority. The execution of remediation works shall commence immediately without compromising with any other issues and must strictly complete within the allocated remediation time frame. It shall include only the critical issues

3.2.2. Electrical issues related to code violation and/or non-conformity with codes, protection of electrical switchgears and equipment, spatial arrangement and location of switchgears and equipment, design and drawings, shall be considered as **P2** Level of priority. The execution of remediation work of **P2** shall commence along with or soon after the **P1** level remediation work has commenced. It shall include only the moderately-critical issues.

3.2.3. Electrical issues related to violation of code and/or non-conformity with codes, workmanship of operation and maintenance and obsolete technology of electrical system, shall be considered as **P3** Level of priority. The execution of remediation work of **P3** shall commence along with or soon after the **P2** level remediation work has commenced. It shall include only the non-critical issues.

3.2.4. It doesn't take into consideration the remediation time frame and feasibility of remediation. It doesn't take into consideration the capital, materials and working environment.

4. GENERAL BUILDING INFORMATION

1. Factory Name	**:**	Green Textile Limited (Unit-3)_Expansion.
2. Factory Address	**:**	Nijhuri, Baraid Bazar, Valuka, Mymensingh.
3. ID	**:**	24526
4. Inspection participates	**:**	Monir Hossain General Manager (Compliance) Email: mdmonir.hossain@epicbd.com Cell: 01973331119 Md. Tofazzal Hossain AGM (HR & Compliance) Email: tofazzal.hossain@epicbd.com Cell: 01715625862 Rabiul Islam AGM (Engineering & Utility) Email: rabiul.islam@epicbd.com Cell: 01979969042

5. BUILDING DATA

A. General

Green Textile Limited (Unit-3)_Expansion. is established in its one single storied Main Production Shed, one four Storied Canteen Building, one single storied Utility Building, one single stored Wastage store, Toilet Shed, Walkway and Car parking shed. As reported by the Factory Management, the Main Production Shed's construction was started in March 2021 and ended in February 2022. They occupied the building in around June 2022. During the time of the Inspection, the factory accommodated a total of 610 workers working in this factory.

The floor-wise utilization of the buildings is as detailed below:

Main Production Shed (Steel) (54,000 sqft):

Ground Floor : Cutting, Sewing, Finishing, Packing, Office, Warehouse.

Utility Building (RCC) (3,300sqft):

Ground Floor : Transformer, Substation, Boiler, Generator, Compressor.

Toilet Shed (Steel) (2,828 sqft):

Ground Floor : Toilet Block.

Walkway (621 sqft):

Ground Floor : Walkway shed between production shed to toilet block.

Wastage Store (Steel) (2,450 sqft):

Ground Floor : Wastage Store.

Car Parking (Steel) (1,430 sqft):

Ground Floor : Parking Shed.

Canteen Building (G+3) (RCC) (29,325 sqft):

Ground Floor : Embroidery.
1st Floor : Training Centre.
2nd Floor : Machine Yards & Furniture Store.
3rd Floor : Employee canteen/dining.

FLOOR LAYOUT INFORMATION

The four storied Canteen Building is 48 feet tall and has a total floor area of approx. 29,325 sqft. Figure 1 shows the ground floor layout plan of the factory:

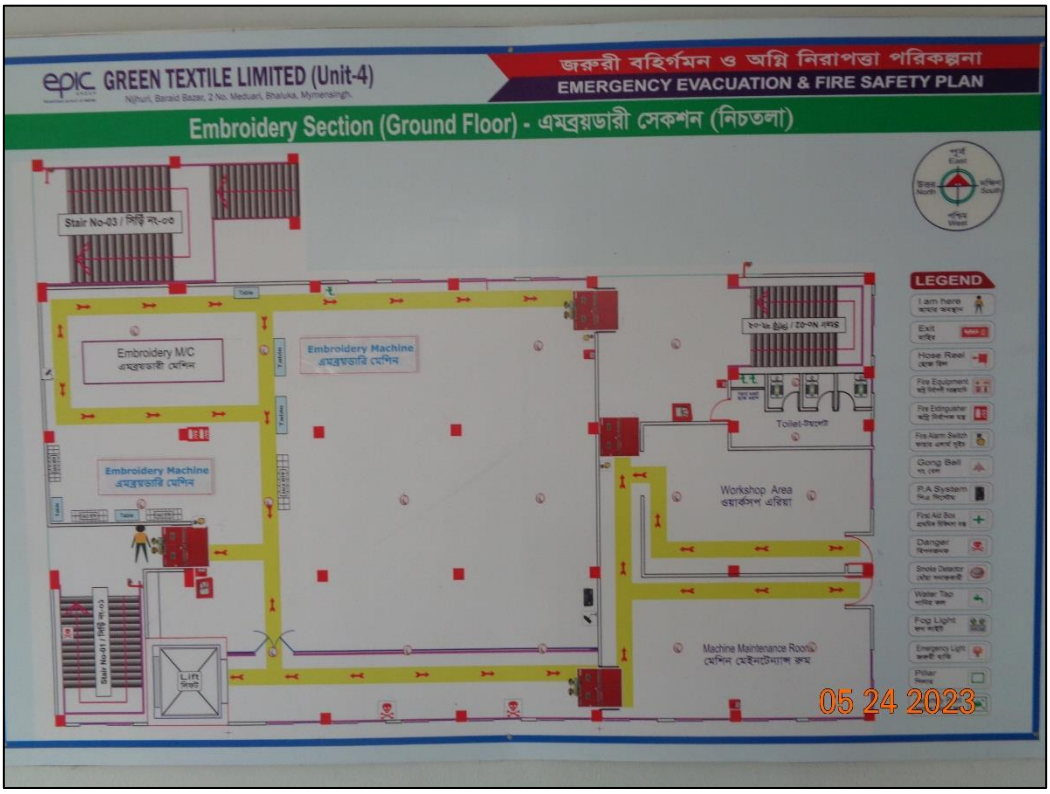


***Figure 1*:** Ground floor layout plan

ELECTRICAL SYSTEM & UTILITY INSTALLATION INFORMATION

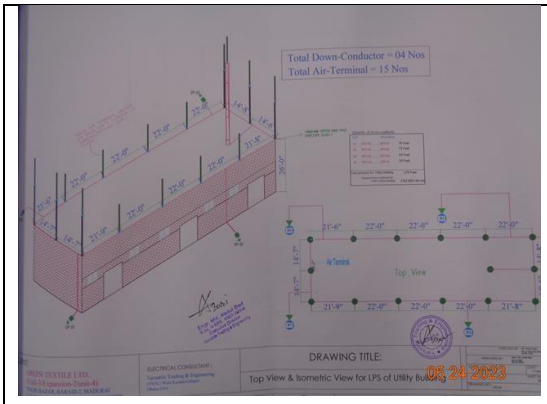
Green Textile Limited (Unit-3)_Expansion. premise is connected to grid (REB) supply, which is used as main source of power supply tapped from 11kV Overhead line and delivered through High Tension cable. The 11kV supply is stepped down by 1500 kVA 11/0.415kV, 3 phase power transformer. They also have 1 Diesel Generators (1500 KVA) which is used as backup source of power supply, connected with REB through ATS (Automatic Transfer Switch) Electrical system and Utility installation information at a glance:

Query	Information	Remarks
Grid Electricity Supplier	REB	
Sanctioned Load	1200 kW	
Number of Transformer	01	
Type of Transformer	Outdoor type oil cooled	
Capacity of each transformer	1500 kVA	
Transformer location in the factory	Far apart from main production building	
Transformer owned by factory	Yes, and maintained by factory	
HT switch gear	HT switchgear is located near the transformer	
Number of Generator	1	
Capacity of each Generator	1500 kVA (Diesel)	
Generator location in the factory	Far apart from main production building.	
Number of Compressor	1	
Capacity of each Compressor	75kW	
Number of Boiler	1	
Capacity of each Boiler	2 Ton (Diesel)	
Total no. of LT panel	1	
Total no. of Distribution boards	26	
Power distribution system	All through BBT trunking with few cabling	
Number of manual changeovers	0	
Number of synchronizers	1	
Number of Automatic transfer switch	1	
Substation room location	Far apart from main production building	

B. ELECTRICAL PRACTICES IN OPERATION AND MAINTENANCE

Maintenance and Operations is done by in-house electrical and maintenance team of the factory. However, the maintenance of major equipment like transformer, generator and boilers are sometimes outsourced to the service centers.

Inspecting teams were presented with the maintenance programs, logs and maintenance schedule of the factory's electrical facilities; some typical practices are shown below.



Lightning Protection System (LPS) Drawing

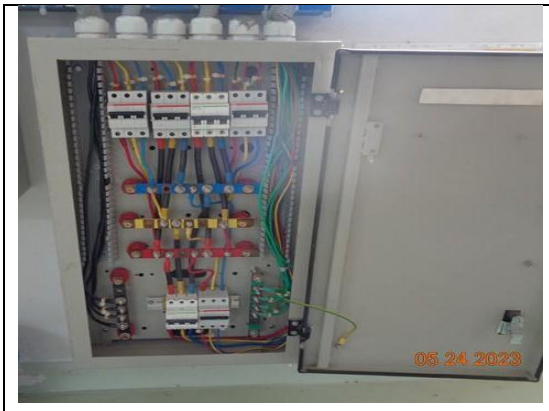
As-Built Lightning Protection System (LPS)

Transformer Room

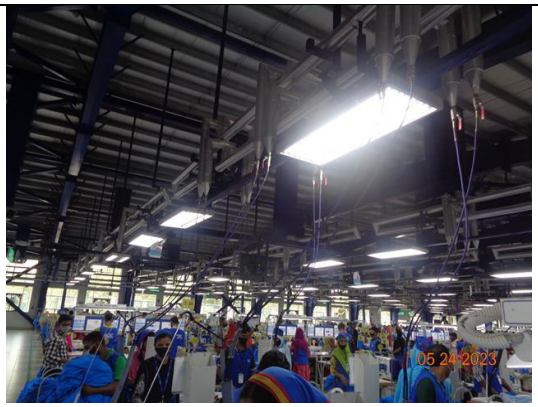
Generator Room

Personal Protection Equipments

Typical Electrical Distribution Panel



Cable entry is done through cable gland with base plates.



Floor BBT

Storage Area

Typical Working Floor

6. LIGHTNING PROTECTION RISK ASSESSMENT

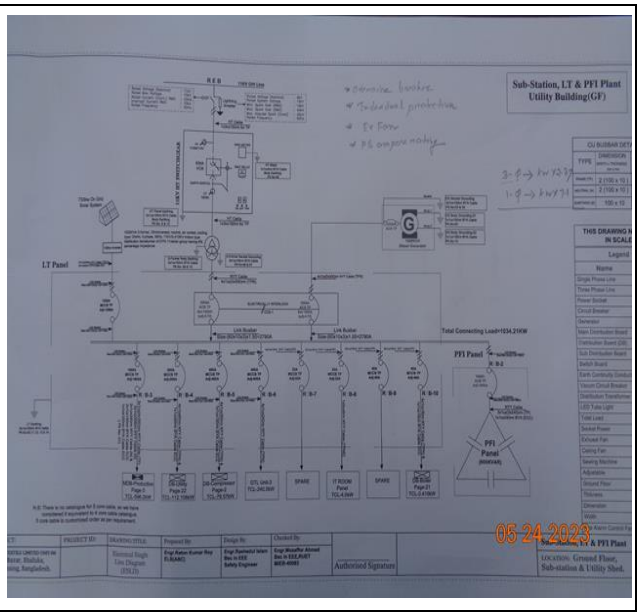
Calculation of Risk Index Factor (BNBC 2006) for Canteen Building			
Index A	**Use of Structure**	Small and medium size factories, workshops and laboratories	6
Index B	**Type of Construction**	Reinforced concrete with nonmetal roof	2
Index C	**Contents or Consequential Effects**	Industrial and agricultural buildings with specially susceptible contents	5
Index D	**Degree of Isolation**	Structure located in an area with a few other structures or trees of similar height	5
Index E	**Type of Terrain**	Flat terrain at any level	2
Index F	**Height of Structure**	9 – 15 m	4
Index G	**Lightning Prevalence**	Over 21	21
	Total Risk Index of the building		45
Requirement of installing LPS		Yes	

The risk index is calculated for all structures and LPS is installed in all structures where it is required.

7. FINDINGS AND RECOMMENDATIONS

The table below summarizes the major electrical hazards identified during the walk through inspection. Recommendations have been provided to each finding.

The implementation schedule shall be developed by the factory to remediate each of the findings. The specific timing of improvements, including any requested extensions due to design / installation constraints, shall be submitted to the RSC for an approval.

FINDING NO:	**E - 1**	
CATEGORY:	**DOCUMENTATION**	
FINDING: Field information has no/less reflection in existing SLD.		
RECOMMENDATION: Draw as built electrical SLD mentioning all required information by qualified engineer and get it reviewed by RSC. Electrical SLD must be updated properly when electrical system is modified.		
PRIORITY:	**P2**	
REMEDIATION TIME FRAME:	**2 MONTHS**	

FINDING NO:	**E - 2**	
CATEGORY:	**TESTING & PERIODIC MAINTENANCE**	
FINDING: Earth resistance is not satisfactory.		
RECOMMENDATION: Adequate number of earth pits must be ensured for the factory with proper earth lead and earth electrode size as mentioned in BNBC requirements. Earth resistance shall be less than 1 ohm for electrical system and equipment earthing.		
PRIORITY:	**P3**	
REMEDIATION TIME FRAME:	**2 MONTHS**	

FINDING NO:	**E - 3**	
CATEGORY:	**DISTRIBUTION BOARD/PANEL**	
FINDING: Non rated and non-certified comb bar used for powering multiple MCB.		
RECOMMENDATION: For connecting multiple MCB use rated and listed comb bar.		
PRIORITY:	**P2**	
REMEDIATION TIME FRAME:	**2 MONTHS**	

FINDING NO:	**E - 4**	
CATEGORY:	**WIRING SYSTEM**	
FINDING: Individual overload protection missing/ inadequate for motor above 376W.		
RECOMMENDATION: Every electric motor having a rating exceeding 0.376 kW shall be provided with individual control equipment incorporating means of protection against overcurrent.		
PRIORITY:	**P2**	
REMEDIATION TIME FRAME:	**2 MONTHS**	