ELECTRICAL SAFETY INSPECTION REPORT

BIG BOSS CORPORATION LTD., MIDDLE BADDA, GULSHAN, DHAKA-1212, BANGLADESH

Factory List:

1. Big Boss Corporation Ltd.
2. Step 3 Apparels Ltd.
3. Lifestyle Fashions Ltd.
4. KA Designs Limited.

Inspected on November 09, 2013

ACCORD
on Fire and Building Safety in Bangladesh

SUMMARY

Big Boss Corporation Ltd. is located in a rented high-rise 11 storied commercial building. The building was constructed in 1996. Big Boss rents the entire 2nd, 3rd, and 7th floors. The other floors in the building are occupied by the other garment manufacturers. The building has both ground floor and basement which is used for storage. Big Boss Corporation Ltd. has been operating in this building since 2010. The total estimate number of workers in the factory is 1,050.

The Factory was surveyed for electrical safety by Woosun Energy and Construction Co., Ltd. (WEC).
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 Accord. 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 will be further addressed as part of follow-up inspections.

Table below summarizes the major electrical safety issues identified during the inspection.
Recommendations have been provided to address each issue.

An 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 Accord for approval.

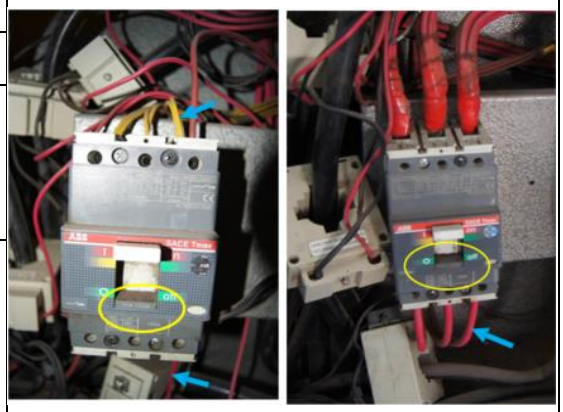
FINDINGS AND RECOMMENDATIONS

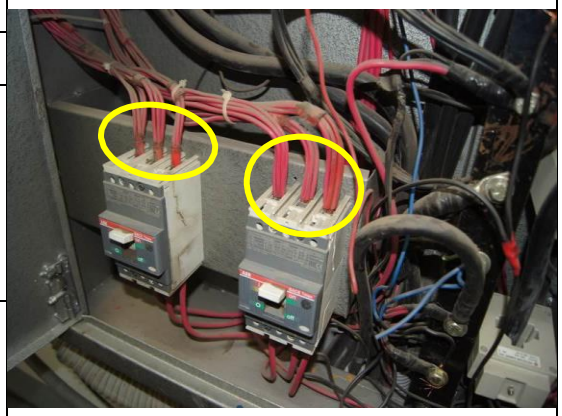
Finding #: E- 1	
Category: GENERATOR ROOM	
Finding: Cable termination at the generator control panel is laid on the floor covered in flexible PVC conduit and not fixed with cable lugs.	
Recommendation: Cable must be laid and supported on cable trays and raisers and must be fixed firmly with cable glands through gland plate	Wiring and cable installation inside generator room
Remediation Timeframe: 3 Months	

Finding #: E- 2	
Category: TRANSFORMER ROOM	
Finding: Cables and wires inside panels are not dressed.	
Recommendation: Cables terminating to & from panel must be dressed to avoid short circuit in side panel and to ease maintenance.	Wiring inside LT panel
Remediation Timeframe: 3 Months	

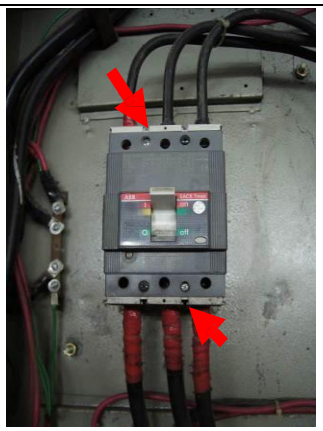
Finding #: E- 3	 
Category: TRANSFORMER ROOM	
Finding: Cables/wires entering/leaving panels are not firmly fixed...	
Recommendation: Cables terminated to panel must be firmly fixed with cable glands through gland plate.	Cables and wirings terminating at distribution panel (typical)
Remediation Timeframe: 3 Months	

Finding #: E- 4	
Category: TRANSFORMER ROOM	
Finding: One of the current transformers secondary in second floor panel is left open (not connected).	
Recommendation: It is dangerous to keep the secondary of CT open. It must either be removed or else shorted to avoid high terminal voltage.	Current transformer installed inside LT panel without secondary side not connected.
Remediation Timeframe: 3 Months	

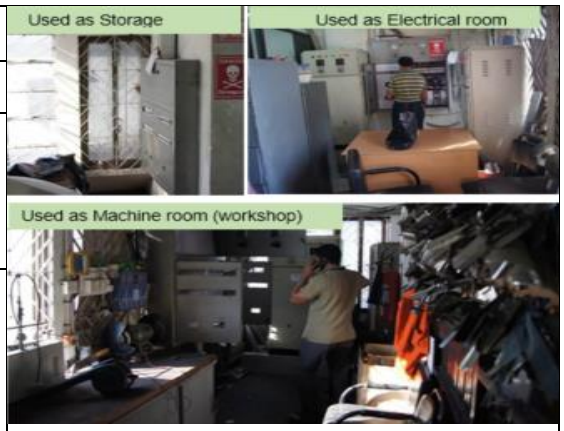
Finding #: E- 5	
Category: BOILER & COMPRESSORS	
Finding: Cables used do not correspond to the size of the MCCB connected.	
Recommendation: The capacity of the MCCB (100A) installed is too large for the incoming line size used. Selection of cable size and MCCB must be designed as per the requirement.	Smaller size cables connected to higher rated MCCBs (Typical)
Remediation Timeframe: Within 1 Month	

Finding #: E- 6	
Category: TRANSFORMER ROOM	
Finding: Multiple wires (bunched) are terminated at a terminal in MCCBs.	
Recommendation: Not more than 2 cables must be terminated at one point. A large size cable can be used to connect from the output of the MCCB to Bus bar from where individual MCBs may be supplied. It can also be done by using MCB terminal shorting loop of proper size.	Multiple wires terminating at MCCB terminals
Remediation Timeframe: Within 1 Month	

Finding #: E- 7	
Category: TRANSFORMER ROOM	
Finding: Bus bars are painted with enamel paints to identify phase.	
Recommendation: For proper electrical connection / bonding, the paints must be removed at the terminal points. Paints within joints may increase contact resistance and may cause heating. The paint is combustible and is not recommended for high current. It may be replaced by heat shrink insulating rubber boots.	Bus bars inside distribution panel painted with enamel paints (Typical)
Remediation Timeframe: 3 Months	

Finding #: E- 8	
Category: TRANSFORMER ROOM	
Finding: Barriers between different phases are not installed on MCCB.	
Recommendation: Phase separation between MCCB terminals must be installed to avoid short accidental short circuit.	Cables terminating at MCCB terminals inside panel without phase barriers (typical)
Remediation Timeframe: Within 1 Month	

Finding #: E- 9	
Category: GENERATOR ROOM	
Finding: Panels are not connected with separate earth and no earth bonds are provided between panel board and swing door(s).	
Recommendation: Panels must be connected with separate earth and every metal swing doors must be connected with earth bond.	
Remediation Timeframe: Within 1 Month	Panel doors not bonded (typical)

Finding #: E- 10	
Category: GENERATOR ROOM	
Finding: LT panel board rooms on third floor and seventh floor are used for other use, which has congested the surroundings.	
Recommendation: a) The electrical room in third floor must be moved to another place and all furniture including grinding machines must be removed. b) Machine room on seventh floor LT panel room must be moved to other places and the space surrounding the panels must remain clear. c) Storage surrounding the other panel on third floor must be cleared and kept free all times	
Remediation Timeframe: Within 1 Month	Storage near panels and tables arranged in front of panels (typical)

Finding #: E- 11	
Category: SWITCHBOARDS AND PANELS	
Finding: Cables run in boiler rooms are not protected from ambient heat.	
Recommendation: Cables and wires used in boiler room must be covered/protected from ambient heat from the boiler.	
Remediation Timeframe: 3 Months	Wirings exposed in boiler room

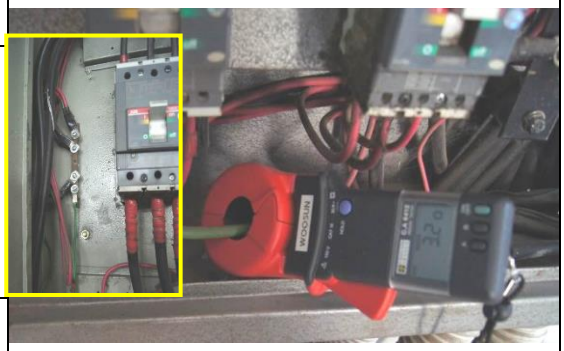
Finding #: E- 12	
Category: SWITCHBOARDS AND PANELS	
Finding: Cables/wires terminating at Motors/panels and devices are not fixed firmly.	
Recommendation: Cables terminating at motors, panels and devices must be terminated with proper cable gland. Cables/conduits must be supported on cable trays or raisers.	Cables terminating at motor inside boiler room.
Remediation Timeframe: 3 Months	

Finding #: E- 13	
Category: SWITCHBOARDS AND PANELS	
Finding: Cables and wires are run in flexible PVC conduits (not continuous) supported with cable ties and metal strips on walls, ceiling and floors.	
Recommendation: Cables must be run in rigid conduits of proper sizes and must be continuous throughout length. Bends, corners and tees must be used to navigate corners. Cable trays with proper accessories may be used to support cables	Cables and wirings inside factory building. Section of the wirings supported on window grill (typical)
Remediation Timeframe: 6 Months	

Finding #: E- 14	
Category: SWITCHBOARDS AND PANELS	
Finding: Aluminum tray/channels used to support cables or run wirings, in third & seventh floors, are mostly supported from the ceiling but are not installed with proper bends, joints and cover.	
Recommendation: Aluminum channels used for cable trays or the wiring ducts must be used with proper corners, bends and covers.	Wiring ducts supporting wiring above work tables inside production floors installed without accessories (typical)
Remediation Timeframe: 3 Months	

Finding #: E- 15	
Category: SWITCHBOARDS AND PANELS	
Finding: The wooden ducts are used in second floor to run wirings, and often support cables/flexible PVC conduits, does not have cover & bends.	
Recommendation: The wooden ducts used must have removable covers to prevent from dust and damages. Only wires and cables of smaller cross-sectional area may be used as it does not provide bends & elbows.	Wooden ducts installed overhead supporting wiring in section of production floor wiring.
Remediation Timeframe: Within 1 Month	

Finding #: E- 16	
Category: SWITCHBOARDS AND PANELS	
Finding: Cables & wires passing through walls, floors and ceilings are not protected from mechanical damages.	
Recommendation: Cables passing through walls, ceiling or floors must be protected from mechanical damages by running through rigid ducts (steel conduits, steel ducts.	Cables inflexible PVC conduits passing through walls unprotected (typical)
Remediation Timeframe: 3 Months	

Finding #: E- 17	
Category: SWITCHBOARDS AND PANELS	
Finding: Earth conductors used to loop panels, devices and equipment is not continuous. The earth loop resistance measured at different points range from 3 - 5 ohms (main conductors) and 18 – 90 ohm in branches. High leakage current (9A - 11A) is measured through SDB main conductors.	
Recommendation: a) Mid span joints to provide earth for devices/panels must be avoided. b) Multiple earth conductor termination through a cable lug/ferrule must be avoided. c) Earth conductor must be continuously looped from main earth (electrode) to the end connection.	Measuring high earth loop impedance (main). Multiple earth conductors terminating at a terminal on earth strip inside panel (inset)
Remediation Timeframe: Within 1 Month	