TECHNICAL REPORT

ON

STUDENTS INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

AT

EASSY ELECTRICAL INSTALLATION

BY

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DEDICATION

I dedicate this report to God who gave me the grace and strength to finish my SIWES program successfully and my parents who helped in providing all the necessary resources.

ACKNOWLEDGEMENTS

First and foremost, these few paragraphs will be unable to do justice to those who I owe a big debt of gratitude for the successful completion of my SIWES.I hereby appreciates God Almighty for giving me the Grace, Opportunity and Strength to complete my industrial training successfully. I also wish to acknowledge the University for giving me the opportunity to participate in the Student Industrial Work Experience Scheme (SIWES). Finally, I would like to acknowledge my supervisor for his guidance and support throughout my training period.

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REPORT REVIEW

I did my industrial attachment at the electrical department of **EASSY ELECTRICAL INSTALLATION** Adeta Round About where I was at first observe how to manipulate some electrical equipment/tools before I was allowed to be manipulate them for use on my own.

Also the report contained the problem faced as well as some suggestion to the scheme improvement.

CHAPTER ONE

INTRODUCTION

1.1BACKGROUND

The Industrial Training Fund established by decree 47 was introduced in 1971, vis-à-vis the birth of the Students Industrial Work Experience Scheme (SIWES) the same year by the Federal Government of Nigeria (FGN). It is an integral part of the requirements for the award of Certificates, Diplomas, and Degrees in higher institutions of learning i.e. Colleges of Education, Polytechnics, Universities, etc. Student Industrial Work Experience Scheme (SIWES) exposes students to industry-based skills necessary for a smooth transition from the classroom to work environments. It accords students of tertiary institutions the opportunity to familiarize themselves with the needed experience in handling machinery and equipment which are often found in such an educational institution.

OBJECTIVES OF SIWES

1.2The primary objectives of SIWES are:

1. **Bridge the gap between theory and practice**: **SIWES** aims to provide students with practical exposure to complement the theoretical knowledge they acquire in classrooms. By working in real-life industrial environments, students can see how concepts learned in school are applied in practice.
2. **Enhance employability**: The program helps students develop essential skills, including technical and soft skills, which are highly valued by employers. Through industrial training, students gain firsthand experience in the workplace making them better prepared for employment after graduation.
3. **Familiarize students with modern technologies and equipment**: **SIWES** gives students the opportunity to work with advanced tools, machines, and technologies that they may not have access to in school. This exposure ensures that students are up to date with industry standards.
4. **Promote industry-academia collaboration**: The scheme fosters a close relationship between academic institutions and industries, ensuring that students receive relevant training and that academic curricula are aligned with industry needs.
5. **Improve students' problem-solving abilities**: By working in a real industrial environment, students are exposed to challenges and practical problems that require innovative solutions. This helps sharpen their problem-solving and critical-thinking skills.
6. **Prepare students for leadership and teamwork roles**: **SIWES** promotes collaboration and teamwork, as students often work in teams to achieve project goals.

This experience helps build leadership and teamwork skills, essential for career growth.

7. **Provide insights into workplace culture**: The program helps students gain an understanding of professional ethics, workplace culture, and communication, which are vital in any professional setting.

CHAPTER TWO

2.1 Location

No, 25 Adeta Round About Pakata Ilorin Kwara State

2.2 EASSY ELECTRICAL INSTALLATION: Was organized on the year 1994-1995. They deals with supply, design, construction, installation of industrial electrical equipment.

CHAPTER THREE

3.1. CONSTANT CURRENT REGULATOR PANEL (CCR)

The constant current regulators (CCR) provide a constant output into a load of variable impedance constant. The load is normally an airport series lighting circuit formed by the primaries of a number of lamps isolating transformer. The lamp brightness may be controlled locally or remotely from the control tower.

The CCR controls the lamp current by providing phase variable gate firing pulses to trigger a pair of thyristors connected in inverse parallel over current protecting and open circuit (over voltage) protection is provided.

3.2. R.M.U. SWITCH GEAR (Ring Main Unit) AND ITS USES

RMU is an electrical switch gear that is used to operate electrical networks under normal & abnormal conditions.

- **USES**

- R.M.U serves as a protective device to its associated transformer.
- It also makes the distribution of power supply in ring mains possible where armored cable is used

3.3 ELECTRICAL MAINTENANCE AND REPAIR OF CABLE

Responsibility: As an electrical student I assisted in performing scheduled maintenance to prevent faults, troubleshoot issues, and repair damaged components.

SOME COMMON TYPES OF WIRING SYSTEM

1. Conduct wiring
2. Trucking wiring
3. Ducting wiring
4. Surface wiring

FEATURES OF PROTECTION

a) Main switch 60amps single phase with neutral

b) One 30amps fuse to protect cooker unit

c) One 30amps for 13amps ring mains

d) One or two 5amps fuses for lighting circuit

e) One 20amps for 15amps socket used for AC

SOME ELECTRICAL TOOLS AND EQUIPMENT USED

- Pliers
- Knife
- Screw driver (flat-face and star-face)
- Tester
- Cutter
- Multi-meter
- Surge generator
- Megger insulation tester e.t.c

1. **PLIERS:** Pliers are classified by type and overall length, usually made of high carbon steel, jaws hardened and tempered.

There are various types of pliers, each designed for specific use

(a) Flat nose: used to hold flat materials

(b) Combination: can be used to hold around or flight material and have

Cutting edges for cutting splits pins, locking wire.

(c) Snip nose: for twisting lock wire

(d) Slide cutting: for cutting soft wire

(e) Cable Stripping: for removing the insulation from electrical cable.

2. **KNIFE:** it is used for cable peeling.

2. **FLAT AND STAR SCREWDRIVER:** Used for driving screw in accordance with the size of screw, Blade of high carbon or alloy steel. Also, screwdriver can be classified by its type of blade

4. **TESTER:** Used for testing the positive or availability of supply in the cable

5. **CUTTER:** This is used for cutting cables.

6. **MULTIMETER OR UNIVERSAL INSTRUMENT:** May be used to measure

Voltage, current and resistance. An ‘Avometer’ and ‘fluke’ are typical examples.

7. **SURGE GENERATOR:** It is high voltage equipment used to detect the point of

fault on high tension cable its output voltage varies from 5kv to 30kv.

CHAPTER FOUR

4.1 SUMMARY

During my four-month industrial training at **EASSY ELECTRICAL INSTALLATION**, I gained invaluable experience working in the power distribution sector. This placement provided me with hands-on experience in the departments of Protection & Control (P&C), Network Planning & Design (NP&D), collectively equipped me with practical skills, theoretical knowledge, and a deeper understanding of power distribution systems.

SKILLS ACQUIRED

Throughout my SIWES placement, I developed both technical and professional skills essential for a career in electrical engineering:

- **Technical Skills:** Calibration of relays, fault isolation techniques, load analysis, network design, transformer testing, and equipment installation. These skills reinforced my practical knowledge and ability to apply theoretical concepts.
- **Analytical Skills:** Load flow analysis, demand forecasting, and fault analysis taught me how to approach problem-solving from an analytical perspective, using data to support decision-making.
- **Communication and Teamwork:** Collaborating with various departments improved my interpersonal skills and taught me the value of effective communication in coordinating tasks with field crews and providing customer support.

- **Safety and Compliance Awareness:** Observing and adhering to safety standards across departments emphasized the importance of maintaining safe working conditions, especially around high-voltage equipment.

4.2 SUGGESTIONS FOR IMPROVEMENT

For the improvement of student industrial work experience scheme (SIWES). I thereby suggest that.

1. SIWES should try and be paying money for the industrial training (I.T) program before or immediately after the program so as to motivate the students
2. SIWES should create a time of orientation for organizations. In case of misused of I.T students
3. The supervisor should please increase the number of time to visit student in his/her place of attachment

4.3 CONCLUSION

The SIWES program at **EASSY ELECTRICAL INSTALLATION** has been a great experience, bridging the gap between theory and practice. It has equipped me with practical skills in electrical operations, system monitoring, and fault handling while emphasizing the importance of safety and teamwork in technical environments.

Through exposure to real-world challenges, I have gained a better understanding of the responsibilities and complexities involved in maintaining a stable power distribution network. This experience has prepared me to face similar challenges in my future career, where I hope to apply the knowledge and skills I acquired to make meaningful contributions to the field of electrical engineering.

Overall, this placement at **EASSY ELECTRICAL INSTALLATION** has been an enriching and transformative experience. It has given me a well-rounded exposure to the power distribution sector, honed my technical abilities, and instilled a professional work ethic. As I complete my final year studies, I am eager to apply the knowledge and skills I've gained, contributing to advancements in the power sector and supporting Nigeria's drive for improved and sustainable energy infrastructure.