

COMPETENT CONTROL OF ELECTRICAL INSTALLATION - ISSUES AND CHALLENGES

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PRESENTING THIS TOPIC AND THE ISSUES IS A CHALLENGE SIMPLY BECAUSE THE ISSUES ARE RELATED TO:

- NON-COMPLIANCE WITH LEGISLATIVE REQUIREMENT DUE TO IGNORANCE OF OR IGNORING THE LAWS.
- CONFLICTING LEGISLATIONS.
- MISMATCH IN COMPETENCY BETWEEN THE NEEDS OF INDUSTRY DUE TO RAPIDLY CHANGING TECHNOLOGY AND COMPETENCY LEVEL OF COMPETENT PERSONS AVAILABILITY.

- SHORTAGE OF COMPETENT PERSONS WITH SUFFICIENT KNOWLEDGE AND EXPERIENCE.
- **(IT MUST BE MADE CLEAR SOME OF THE EXISTING ELECTRICAL CHARGEMN ARE VERY COMPETENT AND USEFUL TO THE INDUSTRY)**
- COST OF COMPETENT PERSONS TO INDUSTRY IN RESPECT TO THEIR RELEVANCE.
- READILY AVAILABLE SERVICES THROUGH OUTSOURCING FACILITIES ON A 24 HOUR BASIS.
- READILY AVAILABLE MULTISKILLED “COMPETENT” FOREIGN WORKERS AT LOWER COST.
- THERE IS A NEED, AN URGENT NEED TO ADDRESS THESE ISSUES NOT ONLY BY ENERGY COMMISSION BUT ALSO OTHER STAKEHOLDERS – AUTHORITIES, COMPETENT PERSONS, OWNERS , TRAINERS AND MANAGEMENT.

IN PREPARING AND MAKING THIS PRESENTATION :

REFERENCE HAS BEEN MADE TO THE :

- GRADUAL DEVELOPMENT OF RELEVANT INDUSTRIAL , SAFETY AND EMPLOYMENT LEGISLATION IN THIS COUNTRY SINCE ABOUT 1878.

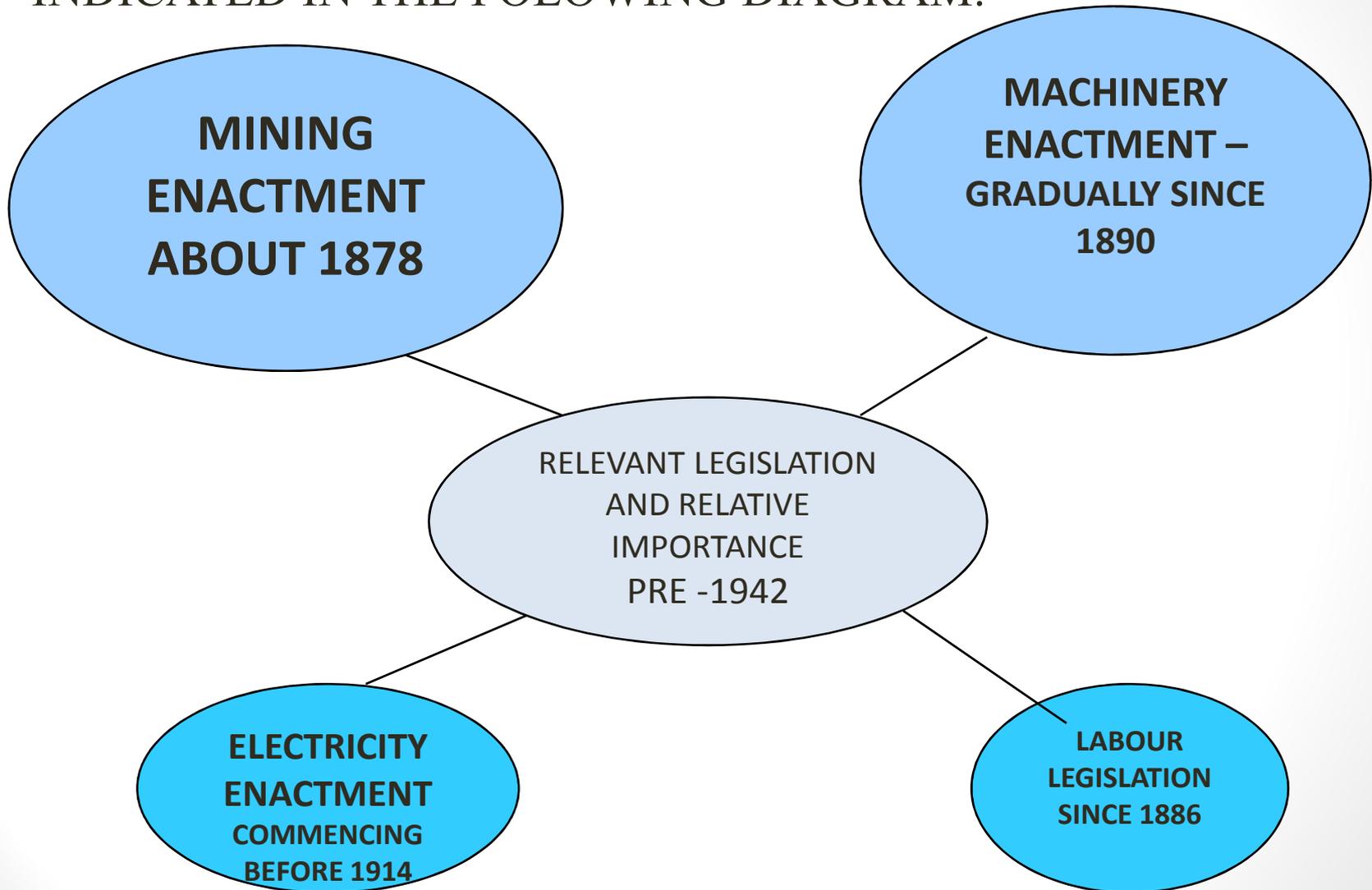
UNDERTOOK :

- PROFESSIONAL STUDY AND REVIEW OF ON JOB ANALYSIS (JOB SPECIFICATION, QUALIFICATION AND EXPERIENCE) AND TRAINING NEEDS ANALYSIS FOR COMPETENT PERONS AT SMALL, MEDIUM AND LARGE INDUSTRIAL AND COMMECIAL ORGANISATION.

- KNOWLEDGE OF THE HISTORY OF A GRADUAL DEVELOPMENT , A PIECE AT A TIME, OF INDUSTRIAL LEGISLATION IN THIS COUNTRY WILL BE USEFUL IN UNDERSTANDING THE EVENTS LEADING TO THE PRESENT **ISSUES AND CHALLENGES.**
- INDUSTRIAL LEGISLATION ORIGINATED IN THIS COUNTRY FROM ABOUT 1878 WITH THE ESTABLISHMENT OF THE MINING DEPARTMENT AND THE INSPECTION OF ENGINES AND BOILERS LEGISLATION IN 1890 .
- IN THE PAST, MOST INDUSTRIAL ACCIDENTS, INCLUDING FATAL, COULD BE CLASSIFIED AS “ACCIDENT” AND THE MATTER SETTLED, UNLESS OF COURSE THERE WAS AN ELEMENT OF CRIMINAL LIABILITY. CIVIL LIABILITY WAS NOT OF CONCERN THEN.

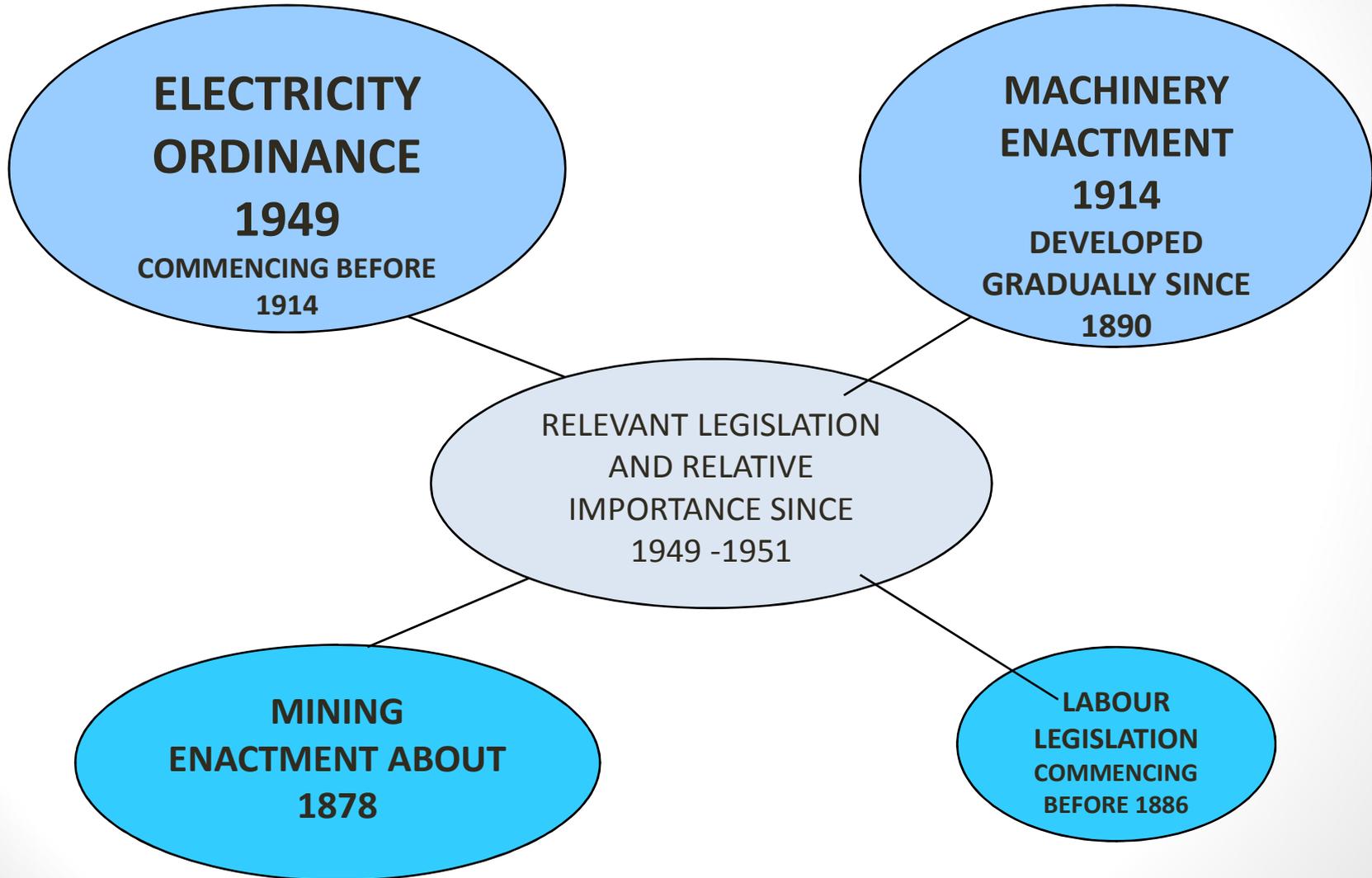
- THE OCCUPATIONAL SAFETY AND HEALTH ACT 1994 (OSHA) HAS CHANGED ALL OF THIS.
- OSHA NOW EMPHASISES PERSONAL SAFETY AND HEALTH, ALSO ALLOWS FOR CRIMINAL AND CIVIL LIABILITY
 - ***INDUSTRIAL ACCIDENT IS NOT AN “ACCIDENT” BUT MOSTLY DUE TO IGNORANCE AND IGNORING SAFETY REQUIREMENT.***
 - ***EMPLOYING NON –QUALIFIED / NON-COMPETENT PERONS IS OBVIOUSLY A SERIOUS ACT OF IGNORANCE OR IGNORING LEGISLATIVE REQUIREMENT.***
 - ***PENALTY UNDER OSHA FOR FAILURE FOR NON- OMPLIANCE ON SAFETY IS SEVERE , INCLUDING IMPRISONMENT.***

BY THE YEAR 1942 THE STATUS OF PRINCIPAL INDUSTRIAL AND LABOUR LEGISLATION IS AS INDICATED IN THE FOLOWING DIAGRAM:-



- THE MINING ENACTMENT WAS AN IMPORTANT LEGISLATION FOLLOWED BY THE MACHINERY ENACTMENT WHICH EVENTUALLY BECAME THE FACTORIES AND MACHINERY ACT.
- THE ELECTRICITY ENACTMENT THEN HAD A LIMITED ROLE.
- LABOUR LEGISLATION WAS ONLY DEVELOPING , INITIALLY ONLY FOR SPECIFIC MACHINERY / SECTOR ISSUES SUCH AS :
 - 1885 – “CHINESE LABOUR REGULATION”
 - 889 – “COOLIES WORKING HOURS”.

- GRADUAL DEVELOPMENT AND IMPORTANCE OF THE LEGISLATION ON ELECTRICITY SINCE 1951 WITH THE ENFORCEMENT OF THE ELECTRICITY ORDINANCE 1949

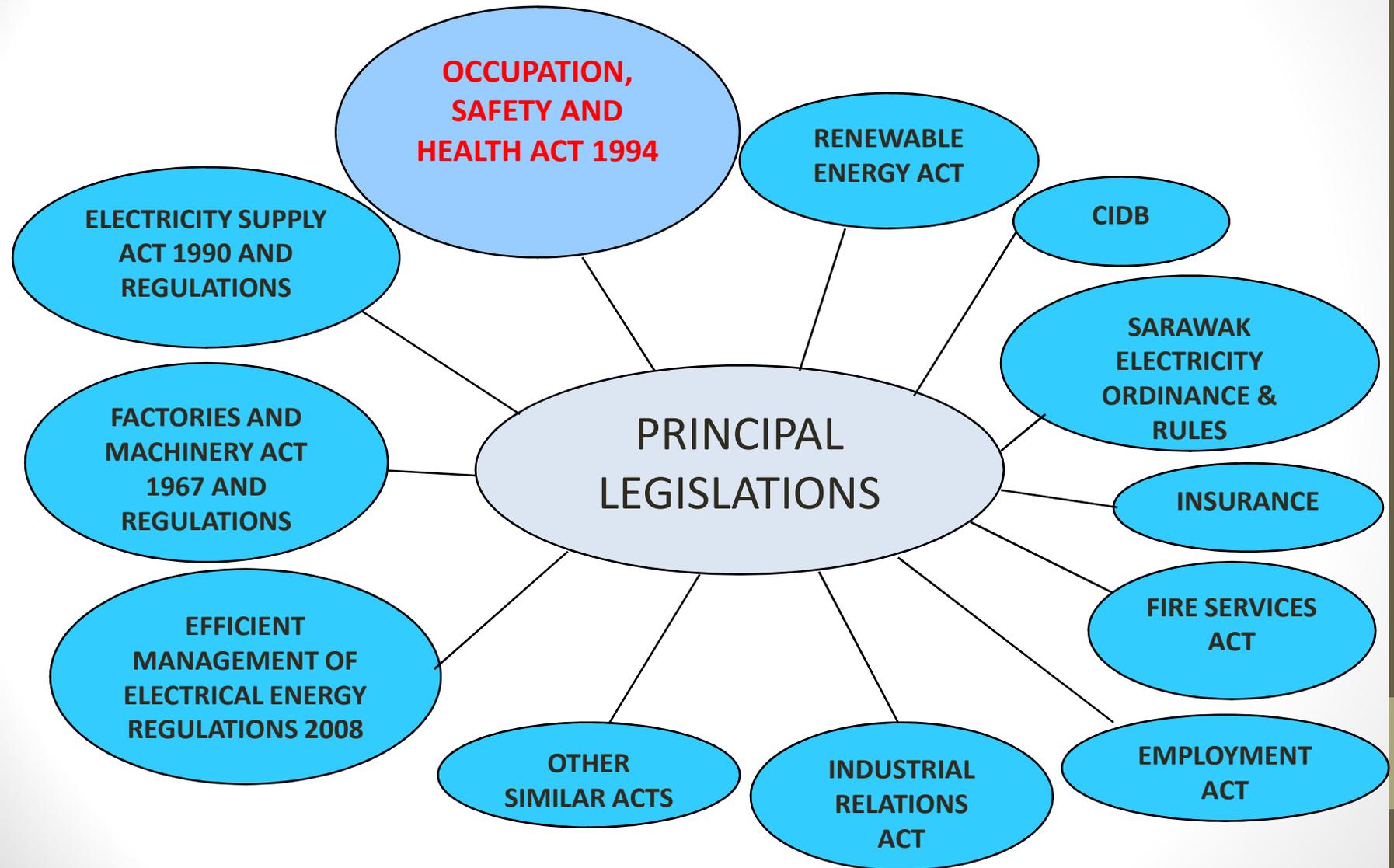


IT MUST BE EMPHASISED THAT

- THE DEVELOPMENT OF THESE LEGISLATION, THOUGH LIMITED, ESTABLISHED A STRONG, A VERY STRONG FOUNDATION IN THE SUBSEQUENT DEVELOPMENT OF INDUSTRIAL AND EMPLOYMENT LEGISLATION IN THE COUNTRY.
- MALAYSIA, FORTUNATELY, UNLIKE MANY DEVELOPING COUNTRIES, HAD AND CONTINUES TO HAVE REASONABLY GOOD LEGISLATION TO SUPPORT INDUSTRIAL AND COMMERCIAL DEVELOPMENT.
- THESE LEGISLATION ALSO PROVIDED FOR THE TRAINING AND CERTIFICATION OF COMPETENT PERSONS INCLUDING COMPETENT ENGINEERS IN THIS COUNTRY.
- THIS CONTRIBUTED, THOUGH NOT WELL RECOGNISED , TO THE INDUSTRIAL AND COMMERCIAL DEVELOPMENT OF THE COUNTRY .

- SINCE AFTER THE SECOND WORLD WAR AND MORE SPECIFICALLY SINCE 1948 INDUSTRIAL AND EMPLOYMENT LEGISLATION DEVELOPED RAPIDLY.
- **THIS RAPID DEVELOPMENT RESULTED IN CONFLICTING LEGISLATION AND CONTINUES UNABATED AND IGNORED.**
- THE SITUATION NOW IS AS INDICATED IN THE FOLLOWING DIAGRAM.
- MOST OF THESE LEGISLATIONS HAVE SOME ELEMENTS OF OVERLAPPING AND CONFLICTING REQUIREMENT.

RAPID DEVELOPMENT SINCE 1948 OF PRINCIPAL LEGISLATION RELEVANT TO COMPETENT CONTROL



- **IT WILL BE EXPLAINED IN SOME DETAIL THAT CONFLICTS IN THE MANY DIFFERENT LAWS IS ONE MAJOR ISSUE AND CHALLENGE THAT NEEDS TO BE ADDRESSED WITH SOME URGENCY.**
- **THIS CAN BE ACHIEVED ONLY THROUGH A STUDY OF ALL RELEVANT LEGISLATION AS INDICATED ABOVE .**
- **DISCUSSION WITH THE ATTORNEY GENERAL'S CHAMBERS SINCE 1972 INDICATES THAT THE ATTORNEY GENERAL'S CHAMBERS RELIES HEAVILY , IN RESPECT TO INDUSTRIAL LEGISLATION, ON THE DEPARTMENT OR AUTHORITY PROPOSING SUCH LEGISLATION TO PREVENT CONFLICTING LEGISLATION.**

INTERPRETATION ACT

SECTION 23:

ANY SUBSIDIARY LEGISLATION THAT IS INCONSISTENT WITH AN ACT (INCLUDING THE ACT UNDER WHICH THE SUBSIDIARY LEGISLATION WAS MADE) SHALL BE VOID TO THE EXTENT OF THE INCONSISTENCY.

THE EFFECT OF THIS PROVISION NEEDS TO BE ACCOUNTED FOR

IT IS IMPORTANT TO APPRECIATE THAT:

- WE ARE DEEMED TO UNDERSTAND AND COMPLY WITH ALL LEGISLATION THAT ARE GAZETTED.
- IGNORANCE OF LAW IS NOT AN EXCUSE.
- ***EACH ONE OF US CAN AND WILL BE HELD LIABLE FOR NOT COMPLYING WITH LEGISLATION, SUBJECT TO THE LIMIT OF OUR RESPONSIBILITY AND AUTHORITY INCLUDING LIMITS OF FINANCIAL AUTHORITY IN ADDRESSING SAFETY ISSUES.***
- ***UNDER OSH NORMALLY THE EXECUTIVE CHAIRMAN /MANAGING DIRECTOR BECOMES INITIALLY LIABLE***

OSHA – EFFECT AND REQUIREMENT

- ***OCCUPATIONAL SAFETY AND HEALTH ACT 1994 IS NOW THE SUPREME LAW IN RESPECT TO SAFETY AND HEALTH AT WORK.***

SECTION 2- THE PROVISIONS OF OSHA IS IN ADDITION TO, AND NOT IN DEROGATION, OF OTHER WRITTEN LAW RELATING TO OCCUPATIONAL SAFETY AND HEALTH.

- **IN THE EVENT OF CONFLICT WITH OTHER LAWS, PROVISIONS OF OSHA SHALL APPLY.**
- **IN THE EVENT OF WORK PLACE ACCIDENTS, INCLUDING ELECTRICAL ACCIDENTS AND FIRE , REPORTS WILL HAVE TO BE SUBMITTED TO DOSH UNDER OSHA IN ADDITION TO THE RELEVANT AUTHORITIES.**

SECTION 15 (1) – DUTIES OF EMPLOYERS -
RESPONSIBLE FOR SAFETY, HEALTH AND WELFARE OF
ALL EMPLOYEES AT WORK.

SECTION 15 (3)

“EMPLOYEE “ INCLUDES INDEPENDENT CONTRACTOR
AND INDEPENDENT CONTRACTOR’S EMPLOYEE –
UNLESS SPECIFICALLY EXCLUDED IN THE CONTRACT.

SECTION 37

INDUSTRIAL CODES OF PRACTICE - NEED TO BE
APPROVED BY MINISTER AND SHALL BE PUBLISHED
IN THE *GAZETTEE*

**SECTION 51 – PENALTY ON CONVICTION –
MAXIMUM TEN THOUSAND RINGGIT OR
IMPRISONMENT NOT EXCEEDING ONE YEAR.**

**SECTION 52 – OFFENCES BY CORPORATE BODY –
INDIVIDUAL CAN ALSO BE HELD RESPONSIBLE.**

(NORMALLY IN THE PAST, IN THE ABSENCE OF OSHA
ONLY THE CORPORATE BODY IS CHARGED AND SINCE
A CORPORATE BODY CANNOT BE SENT TO PRISON
ONLY A FINE IS IMPOSED ON THE COMPANY.)

SECTION 55 –

PERSON CHARGED FOR OFFENCE SHALL SATISFY THE COURT THAT “HE EXERCISED ALL SUCH DUE DILLIGENCE TO PREVENT THE COMMISSIONING OF THE OFFENCE AS HE OUGHT TO HAVE EXERCISED, HAVING REGARD TO THE NATURE OF HIS FUNCTION IN THAT CAPACITY AND ALL THE CIRCUMASTANCES”.

(TRYING TO JUSTIFY THE COURT THAT THE OWNER , RESPONSIBLE PERSON INCLUDING COMPETENT PERSON , IS NOT GUILTY WHEN A FATAL ACCIDENT HAS OCCURRED AT THE WORKPLACE CAN BE DIFFICULT IF NOT IMPOSSIBLE!).

- **EMPLOYING QUALIFIED AND COMPETENT PERSONS UNDER PROVISIONS OF ANY LAW, INCLUDING THE ELECTRICITY SUPPLY ACT AND REGULATIONS MUST BE A BASIC PREREQUISITE AND MANDATORY REQUIREMENT FOR ANY SUCH DEFENCE IN A COURT .**
- **ENSURING ALL ELECTRICAL INSTALLATIONS COMPLY WITH THE ELECTRICITY SUPPLY ACT AND REGULATIONS MUST BE CONSIDERED MANDATORY FOR DEFENCE IN A FATAL ACCIDENT.**

SECTION 60

ONUS OF PROVING LIMITS OF WHAT IS PRACTICABLE, IS ON THE ACCUSED - THIS CAN BE THE MANAGING DIRECTOR, MANAGER, COMPETENT ENGINEERS, COMPETENT PERSONS OR AN EMPLOYEE OR CONTRACTOR. IT STARTS WITH THE MANAGING DIRECTOR

SAFETY AND HEALTH POLICY AND PROCEDURE WILL BE CRITICAL REFERENCE. IF APPROPRIATE COMPETENT PERSON IS NOT EMPLOYED, THE MANAGING DIRECTOR/GENERAL MANAGER CAN BE HELD LIABLE AND MUST BE READY TO GO TO PRISON IN THE EVENT OF FATAL ACCIDENT AT PLACE OF WORK!!. IN ADDITION TO THE CRIMINAL LIABILITY THE NEXT OF KIN CAN ALSO TAKE CIVIL ACTION FOR COMPENSATION.

EVEN FOR A PERSON CHARGED WITH MURDER, THE ONUS OF PROOF IS ON THE PROSECUTION. THE MURDER ACCUSED CAN ELECT TO REMAIN SILENT !!

IN THE EVENT OF A WORK PLACE FATAL ACCIDENT THE ACCUSED WILL HAVE TO SPEAK AND DEFEND !.

NOT EASY WHEN THE FATAL ACCIDENT IS DUE TO NON -COMPLIANCE

- IT WOULD BE OF INTEREST TO OWNERS AND , MANAGING DIRECTORS , TO EMPLOY COMPETENT PERSONS WITH RELEVANT QUALIFICATION TO AVOID THE HASSLE OF GOING TO COURT AND POSSIBLY TO PRISON. WHEN EMPLOYING ELECTRICAL CHARGEMAN IN MUST BE RESIDENT ELECTRICAL CHARGEMAN – NOT “ FLOATING CHARGEMAN “ OR “VIRTUAL CHARGEMAN “
- NOT EMPLOYING A COMPETENT PERSON WHEN REQUIRED CAN BE CONSIDERED A SERIOUS OFFENCE IN THE EVENT OF FATAL ACCIDENT AT PLACE OF WORK.
- DEPARTMENT OF OCCUPATIONAL SAFETY AND HEALTH CAN RELY ON THE REQUIREMENT OF THE ELECTRICITY SUPPLY ACT IN TAKING ACTION UNDER OSHA!

FACTORIES AND MACHINERY ACT AND REGULATIONS

DEFINITIONS:

- MACHINERY - INCLUDES PRIME MOVERS
- PRIME MOVERS INCLUDES ELECTRIC MOTORS
- ELECTRIC MOTOR, THEREFORE IS DEEMED TO BE MACHINERY UNDER THE FACTORIES AND MACHINERY (PERSONS-IN-CHARGE) REGULATIONS

1970

REGULATION 4(2)

COMPETENT ENGINEER UNDER THE FACTORIES AND MACHINERY ACT SHALL ALSO BE IN CHARGE OF THE WHOLE OF THE INSTALLTION.

AS SUCH IT WOULD APPEAR A STEAM ENGINEER SHALL ALSO BE IN-CHARGE OF THE ELECTRIC MOTORS AND ELECTRICAL EQUIPMENT AT THAT STEAM PLANT INSTALLATION.

ELECTRIC MOTORS AND ALTERNATORS AT BOILER INSTALLATION ARE OPERATED BY STEAM ENGINE DRIVERS UNDER SUPERVISION OF THE STEAM ENGINEER. THIS INCLUDES SYNCHRONISING OF ALTERNATORS DRIVEN BY STEAM TURBINES AND INTERNAL COMBUSTION ENGINES.

THIS APPEARS TO BE A CONFLICTING REQUIREMENT TO THE ELECTRICITY REGULATIONS.

IN ACCORDANCE WITH REGULATION 19 OF THE FACTORIES AND MACHINERY (PERSONS –IN-CHARGE) REGULATIONS, THE STEAM PLANT OPERATOR IS DEEMED TO BE “ QUALIFIED AS HE HAS BEEN “TRAINED” UNDER THIS REGULATION, THOUGH NOT POSSESSING ELECTRICAL CHARGEMAN CERTIFICATE” !!

- A STEAM ENGINE DRIVER OR INTERNAL COMBUSTION ENGINE DRIVER WILL NEVER–NEVER ALLOW AN ELECTRICAL CHARGEMAN OR COMPETENT ELECTRICAL ENGINEER TO START AN ELECTRIC MOTOR, INCLUDING A MEDIUM VOLTAGE MOTOR WITHIN THE STEAM PLANT SYSTEM!!!
- **ANY INTERFERENCE IN THIS STATUS WILL SERIOUSLY AFFECT THE OPERATION OF PALM OIL MILLS AND RENEWABLE ENERGY PROJECTS.**

FACTORIES AND MACHINERY (PERSONS –IN-CHARGE) REGULATIONS 1970

- REGULATION 6 (9) – REQUIREMENT OF ENGINE DRIVER IS EXEMPTED IF INTERNAL COMBUSTION ENGINE CAPACITY IS NOT MORE THAN FIVE HUNDRED KILOWATTS.
- REGULATION 13 - CHIEF INSPECTOR **MAY EXEMPT** INTERNAL COMBUSTION ENGINES FOR STANDBY PURPOSES ONLY.
- MANAGEMENT MUST THEREFORE SEEK APPROVAL FOR EXEMPTION OF ENGINE DRIVER IF OVER 500 kW. AN ELECTRICAL CHARGEMAN CANNOT BE DEEMED TO BE QUALIFIED TO OPERATE THE DIESEL ENGINE OF THE GENERATOR SET.

THIS MEANS ELECTRICAL CHARGEMEN OF WHATEVER CERTIFICATE IS NOT QUALIFIED TO START THE STANDBY GEN. SET INTERNAL COMBUSTION ENGINE (DIESEL ENGINE) OF OVER 500kW CAPACITY UNLESS THE OWNER HAS OBTAINED EXEMPTION FOR ENGINE DRIVER REQUIREMENT IN ACCORDANCE WITH THE FACTORIES AND MACHINERY ACT.

EVEN FOR AN INTERNAL COMBUSTION ENGINE OF 500kW AND BELOW THE ELECTRICAL CHARGEMEN NEED TO BE “TRAINED” **IN THAT PARTICULAR ENGINE.**

THE FIRE ACT AND EFFECT ON ELECTRICITY REGULATIONS

THE RIGHTS OF FIREMEN IN THE ABSENCE OF COMPETENT PERSONS AT ELECTRICAL INSTALLATIONS.

- FIREMAN HAS THE RIGHT TO BREAK THE LOCK AND ENTER THE SUBSTATION TO PUT OUT THE FIRE.

SERVICING OF FIRE SYSTEM AT FACTORIES.

- FACTORIES NORMALLY EXPECT THE ELECTRICAL CHARGEMAN TO BE RESPONSIBLE AND UNDERTAKE INITIAL FAULT TRACING. THIS SIMPLY MEANS ELECTRICAL CHARGEMEN MUST HAVE SOME KNOWLEDGE OF FIRE PROTECTION SYSTEM AT THE INSTALLATION.

INSURANCE

THE EFFECT OF INSURANCE CLAIM ON NON-COMPLIANCE WITH LEGISLATION REQUIREMENT:

- THE INSURANCE MAY BE VOID IF ELECTRICAL INSTALLTION IS NOT INSTALLED, TESTED , COMMISSIONED AND OPERATED IN ACCORDANCE WITH THE ELECTRICITY REGULATION.
- THE ABSENCE OF RELEVANT COMPETENT PERSON CAN HAVE SERIOUS IMPLICATION ON THE INSURANCE CLAIM.

EMPLOYMENT AND INDUSTRIAL RELATIONS

EMPLOYER CAN TAKE ACTION INCLUDING DISMISSIAL FOR “MISCONDUCT INCONSISTENT WITH THE FULFILMENT OF THE EXPRESS OR IMPLIED CONDITIONS OF HIS SERVICE AFTER DUE INQUIRY”.

- HOWEVER REFUSING TO OPERATE ELECTRICAL SYSTEMS AND EQUIPMENT, INSTALLED, TESTED AND OPERATED NOT IN COMPLIANCE WITH ELECTRICITY REGULATIONS CANNOT BE CONSIDERED AS UNREASONABLE OR INCONSISTENT WITH EXPRESS OR IMPLIED CONDITIONS.
- THE WORKER HAS THE RIGHT TO ASSUME THAT THE INSTALLATION IS INSTALLED AND OPERATED IN ACCORDANCE WITH LAW WHEN EMPLOYED . THIS IS HIS INHERENT RIGHT .
- IF NOT, EMPLOYEES CAN LEAVE THE SERVICE ON “CONSTRUCTIVE DISMISSAL “ FOR SUCH INSTRUCTION AND SEEK COMPENSATION FOR WRONGFUL DISMISSAL UNDER SECTION 20 OF THE INDUSTRIAL RELATIONS ACT.
- **THIS IS VERY COMMON IN DEVELOPED COUNTRIES AND ASSISTS IN THE PROCESS OF ENFORCEMENT.**

ELECTRICITY SUPPLY ACT AS GAZETTED AND AS IN A “LAW PUBLISHER’S BOOK”

DEFINITION OF AUTHORISED PERSON

AS GAZETTED:

AUTHORISED PERSON MUST BE COMPETENT PERSON.

AS STATED IN AN ESTABLISHED “LAW PUBLISHER’S BOOK:”

IMPLIES NON-COMPETENT PERSONS CAN BE APPOINTED AS AUTHORISED PERSONS. MANY ORGANISATIONS, EVEN MAJOR ORGANISATIONS FOLLOW THIS WRONG INTERPRETATION.

- THE PUBLISHERS HAVE NOW CONFIRMED THAT THE BOOK HAS BEEN REVISED CORRECTING THE ERROR SINCE THEIR OCTOBER 2014 EDITION.
- **INSTALLATION OWNERS ARE ADVISED TO BUY THE NEW REVISED EDITION .**
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- IN DEVELOPED COUNTRIES INSURANCE COMPANIES, UNIONS AND WORKERS WILL ENSURE OWNERS COMPLY WITH SAFETY LEGISLATION.
- NO OTHER FORM OF ENFORCEMENT CAN BE EFFECTIVE AS INSURANCE COMPANY ENFORCEMENT OR WORKERS SEEKING RIGHTS TO SAFETY AND HEALTH ESPECIALLY THROUGH SAFETY AND HEALTH COMMITTEE ESTABLISHED UNDER OSHA AND TRADE UNIONS.

ELECTRICITY REGULATIONS 1994

REGULATION 11

ALL WIRING , REWIRING OR EXTENSION OF WIRING REQUIRES APPROVAL FROM LICENSEE OR SUPPLY AUTHORITY EXCEPT FOR DOMESTIC INSTALLATIONS WHEN THE MAXIMUM CURRENT DOES NOT EXCEED THE AGREED MAXIMUM CURRENT DEMAND.

THIS IS SELDOM COMPLIED WITH AND IS UNLIKELY TO BE COMPLIED WITH EXCEPT FOR NEW INSTALLTION.

EVEN IN SUCH CASES THE “ AS BUILT” DRAWING IS ALMOST ALWAYS NOT AVAILABLE.

THIS NON-COMPLIANCE MUST BE ADDRESSED AND RECTIFIED

REGULATION 11 IS SELDOM COMPLIED WITH AND MOST LIKELY WILL NOT BE COMPLIED.

THIS SIMPLY MEANS MOST IF NOT ALL ELECTRICAL WIRING IN THIS COUNTRY MAY NOT BE LEGAL!!!

IN THE EVENT OF A SERIOUS OR FATAL ACCIDENT IT WILL BE IMPOSSIBLE TO CONVINCING THE COURT THAT ALL PRACTICAL MEANS HAS BEEN ADOPTED.

THE VALIDITY OF INSURANCE , ISO AND GREEN BUILDING CERTIFICATION WILL ALSO BE CALLED INTO QUESTION.

THE REQUIREMENT OF REGULATION 11 MUST BE REVIEWED.

TO REVIEW REGULATION 23 ON CABLE JOINTING

- THE NEED FOR CABLE JOINTER FOR LOW VOLTAGE FEEDER CABLES (CABLES FROM LOW VOLTAGE MAIN SWITCH BOARD TO SUB-BOARDS AND EQUIPMENT) FINAL SUB-CIRCUITS MUST BE REVIEWED.
- THE ELECTRICAL WIREMAN AND CHARGEMAN MUST BE PERMITTED, WITH SOME TRAINING, TO UNDERTAKE SUCH SIMPLE CABLE JOINTS.

REGULATION 36- PROTECTION AGAINST EARTH LEAKAGE CURRENT.

THE REQUIREMENT IS:

- 10 milliamperes FOR EQUIPMENT AT WET PLACES – EG. IN BATHROOMS.
- 30 milliamperes FOR SOCKET OUTLETS.
- 100 milliamperes FOR LIGHTING CIRCUITS.
- THIS IS ALMOST ALWAYS NOT COMPLIED WITH. THE USE OF 300mA RCD IS NOT UNCOMMON.
- **THIS IS A SURE KILLER AND FIRE TRIGGER, BUT CONTINUES.**
- **THIS MUST BE STRICTLY FOLLOWED. THE RECENT TWO FATAL ACCIDENTS WITH THREE DEATHS SHOULD BE GOOD ENOUGH REASON FOR COMPLIANCE. BUILDINGS NOT COMPLYING WITH THIS REQUIREMENT SHOULD NOT BE ISSUED WITH GREN BUILDING AND ISO CERTIFICATION !!!**

- REGULATION 60 IMPLIES THE VISITING COMPETENT ELECTRICAL ENGINEER CAN RECOMMEND ANY GRADE OF COMPETENT PERSONS REQUIRED AT INSTALLATION.
- IT MUST BE APPRECIATED THAT SUCH RECOMMENDATION MUST MEET WITH THE GENERAL REQUIREMENT AND INTENTION OF THE ACT AND REGULATIONS, THAT IS AN AO GRADE CHARGEMAN CANNOT BE RECOMMENDED FOR 11.0 kV SYSTEM NOR CAN AN ELECTRICAL WIREMAN BE RECOMMENDED IN PLACE OF ELECTRICAL CHARGEMAN.
- THE VISITING ELECTRICAL ENGINEER CAN RECOMMEND HIGHER REQUIREMENT BUT NOT LOWER. THIS HAS BEEN SETTLED AT A MEETNG WITH THE THEN JABATAN BEKALAN ELEKTRIK 1994

- REGULATION 62 REQUIRES ELECTRICAL CHARGEMAN OF THE APPROPRIATE GRADE FOR EACH SHIFT, THAT IS ONE BO-11 kV ELECTRICAL CHARGEMAN FOR EACH SHIFT WORK FOR 11.0 kV SYSTEM.
- INDUSTRIES ARE FINDING IT DIFFICULT EVEN TO EMPLOY ONE SUCH CHARGEMAN FOR THE INSTALLATION.
- ***THIS REQUIREMENT MUST BE REVIEWED.***

- REGULATION 64 RESTRICTS CONNECTION OF ANY EQUIPMENT EXCEPT THROUGH A SOCKET OUTLET BY NON-COMPETENT PERSONS.
- NON-COMPETENT PERSONS MAY ONLY REPLACE LAMPS IN A DOMESTIC INSTALLATION.
- **THIS IS ALMOST NEVER COMPLIED WITH.**
- ***THIS REQUIREMENT NEEDS TO BE REVIEWED.***
- ***INTRODUCTION OF TRAINED PERSON , AS IN FACTORIES AND MACHINERY ACT , IS ONE OPTION***

- REGULATION 71 REQUIRES ONLY ELECTRICAL SERVICES CONTRACTOR UNDER ELECTRICAL SERVICES ENGINEER TO UNDERTAKE MAINTENANCE , REPAIR, OVERHAUL AND SERVICING , FAULT LOCATION AND TESTS.
- THE ORIGINAL REGULATION UNDER THE ELECTRICAL INSPECTORATE REGULATIONS ONLY RESTRICTS “CARRYING ON BUSINESS FOR SUCH WORK”.
- REGULATION 111 HOWEVER STATES COMPETENT PERSON MAY UNDERTAKE ANY REPAIR, REPLACEMENT, SERVICING OR CLEANING OF ANY EQUIPMENT WHICH FORMS PART OF THE INSTALLATION.
- IN THE PROPOSED AMENDMENT, THIS IS BEING ADDRESSED.

- REGULATION 80 REQUIRES THE INSTALLATION TO ESTABLISH AND REGISTER A PRIVATE WIRING UNIT EVEN TO INSTALL SIMPLE WIRING IN THEIR OWN INSTALLATION OR EMPLOY A WIRING CONTRACTOR TO UNDERTAKE SUCH WIRING WORK.
- THIS IS FAR TOO COSTLY.
- IN THE PAST ELECTRICAL CHARGEMAN COULD UNDERTAKE MINOR WIRING
- ***THE REQUIREMENT OF REGULATION 80 MUST BE REVIEWED.***

- THIS LEADS TO A SITUATION: FOR LOW VOLTAGE SYSTEM.
- THE ELECTRICAL CHARGEMAN:
 - CANNOT UNDERTAKE ELECTRICAL WIRING AT THE INSTALLATION HOWEVER SIMLPE IT MAY BE (NORMALLY WIRING CONTRCTORS ARE CALLED IN).
 - CANNOT UNDERTAKE FAULT LOCATION , REPAIR AND MAINTENANCE (NORMALLY CONTRACTORS ARE CALLED IN).
 - CANNOT HANDLE PLC SYSTEM – A SEPARATE TECHNICIAN IS EMPLOYED.
 - OWNER / MANAGEEMNT CANNOT UNDERSTAND WHAT AN ELECTRICAL CHANGEMEN “CAN DO”.
 - ***AND THEREFORE MANY HAVE DECIDED NOT TO EMPLOY ELECTRICAL CHARGEMAN EVEN WITH THREAT OF LEGAL ACTION AND POSSIBLY GOING TO PRISON IN THE EVENT OF AND INDUSTRIAL ACCIDENT***

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- MOST INDUSTRIAL PRODUCTION SYSTEMS NOW INCORPORATE PROGRAMMABLE LOGIC CONTROL. (PLC)
- ELECTRICAL CHARGEMAN ARE NOT TRAINED ON THIS PLC SYSTEM.
- THE INDUSTRY NOW NEEDS TO EMPLOY ANOTHER PERSON FOR THIS PLC.
- NORMALLY THIS PLC TECHNICIAN ALSO DEALS WITH LOW VOLTAGE ELECTRICAL SYSTEM , THUS RENDERING ELECTRICAL CHARGEMAN AT LOW VOLTAGE INSTALLATION REDUNTANT.
- ***ELECTRICAL CHARGEMEN MUST BE ABLE TO DEAL WITH OPERATION OF PLC SYSTEM AND DEAL WITH INITIAL FAULT TRACING TO JUSTIFY THEIR IMPORTANCE AND NEED.***

- ELECTRICAL CHARGEMAN HAVE ENJOYED THE REPUTATION AS BEING THE BACKBONE OF ELECTRICAL SYSTEM IN ANY ORGANISATION FOR WELL OVER 60 YEARS. IF THIS IS TO CONTINUE:
 - THERE IS AN OBVIOUS NEED TO REVIEW THE TRAINING AND CERTIFICATION OF ELECTRICAL CHARGEMEN.
 - THERE IS A NEED FOR TECHNICAL KNOWLEDGE BUT THE TRUST MUST BE ON SKILLS . THIS WILL REQUIRE NOT LESS THAN TWO TO THREE YEARS WORK / TRAINING AS ASSISTANT TO ELECTRICAL CHARGEMEN AT THE FLOOR .
 - ELECTRICAL CHARGEMEN AND FOR THAT MATTER ALL COMPETENT PERSONS MUST BE CONSIDERED “BLUE COLLAR “ WORKERS.

REQUIREMENT FOR ELECTRICAL CONTRACTORS

- THE REQUIREMENTS FOR ELECTRICAL CONTRACTORS MUST BE STRICTLY COMPLIED AS IN THE ELECTRICITY REGULATIONS 1994.
- ADDITIONAL REQUIREMENT FOR ELECTRICAL CONTRACTORS BY ANY OTHER AUTHORITY MAY BE IN CONFLICT WITH THE PROVISIONS AND OBJECTIVES OF THE ELECTRICITY SUPPLY ACT.
- OTHER AUTHORITIES SHOULD ALLOW THE ENERGY COMMISSION TO DEAL WITH ALL MATTERS IN RESPECT TO ELECTRICITY AS STIPULATED IN THE ELECTRICITY SUPPLY ACT 1990. QUOTE “ AN ACT TO PROVIDE FOR THE REGULATION OF THE ELECTRICITY SUPPLY INDUSTRY , THE SUPPLY OF ELECTRICITY AT REASONABLE PRICE , THE LICENSING OF ANY ELECTRICAL INSTALLATION , THE CONTROL OF ANY ELECTRICAL INSTALLATION, PLANT AND EQUIPMENT WITH RESPECT TO MATTERS RELATING TO THE SAFETY OF PERSONS AND THE EFFICIENT USE OF ELECTRICITY AND FOR PURPOSES CONNECTED THEREWITH” UNQUOTE .

- INDUSTRY HAS TO SURVIVE IN A FAST CHANGING WORLD.
- IT IS OBVIOUS THAT THE TRAINING MODULE FOR ELECTRICAL CHARGEMEN MUST BE REVIEWED AND REVISED TO MEET THE NEEDS OF THE INDUSTRY.
- **PROFESSIONAL JOB ANALYSIS WHICH INCLUDES JOB SPECIFICATION, QUALIFICATION AND EXPERIENCE REQUIRED FOR THE WORK AT INDUSTRIAL UNDERTAKING INDICATES THAT “ON THE JOB TRAINING OF ABOUT THREE YEARS” NEED TO BE EMPHASISED TO ENSURE ELECTRICAL CHARGEMAN CAN CONTRIBUTE AND ADD VALUE TO THE OPERATION AND MAINTENANCE OF THE FACTORY.**

ELECTRICAL CHARGEMEN MUST BE SKILLED AND BE PREPARED TO UNDERTAKE MANY DIFFERENT WORKS SUCH AS :

MINOR ELECTRICAL WIRING , ELECTRICAL EQUIPMENT AND APPLIANCES REPAIRS AND MINTENANCE, PROGRAMMABLE LOGIC CONTROLLER SYSTEM, FAULT TRACING AND RETIFICATION , LOW VOLTAGE SUB-CIRCUIT CABLE JOINTING.

OWNERS WILL SEE THE BENEFIT OF EMPLOYING ELECTRICAL CHARGEMEN AND WILL EMPLOY THEM.

THIS ISSUE NEED TO BE ADDRESSED.

- AS FOR A 11.0kV SYSTEM:-

- **WITH ONE INCOMING AND TWO OUT GOING FEEDERS, WITH TWO TRANSFORMERS THE COMPETENT PERSON REQUIRED IS A BO-11 CHARGEMAN . NINETY PERCENT OF THE ELECTRICAL WORK IS THAT OF A N A0 CHARGEMAN. INDUSTRY IS NOT PREPARED TO EMPLOY A B0 -11 KV. CHARGEMAN .**
- **MOST INDUSTRY FOR NOW IGNORE THE REQUIREMENT FOR ELECTRICAL CHARGEMEN IN SUCH CASES.**

PASSENGER LIFTS

- THE MAINTENANCE OF THE LIFT IS TO BE UNDERTAKEN BY A COMPETENT PERSON UNDER PROVISIONS OF THE FACTORIES AND MACHINERY (ELECTRIC PASSENGER AND GOODS LIFT) REGULATIONS 1970.
- ARE SUCH COMPETENT PERSONS ALSO QUALIFIED TO UNDERTAKE MAINTENANCE AND REPAIR OF 415 VOLTS ELECTRICAL SYSTEMS AND MOTORS?
- FOR NOW IT WOULD APPEAR NO ONE UNDERTAKES SERVICINGS AND REPAIRS OF THE LIFT INCOMING SUPPLY DISTRIBUTION BOARDS.

POINTS TO PONDER:-

- ***TO REVIEW CONFLICTING LEGISLATION.***
- ***IMPROVE SKILLS OF ELECTRICAL CHARGEMEN TO MEET THE ‘MULTI-SKILLS’ DEMAND OF THE INDUSTRY IN A CHANGING WORLD.***
- ***TO DISCUSS WITH DEPARTMENT OF OCCUPATIONAL SAFETY AND HEALTH–DOSH, CIDB, SEDA, FIRE DEPARTMENT ON RESOLVING THE CONFLICTING AND OVERLAPPING LEGISLATION.***

- ***TO AVOID CONFUSION IN THE INDUSTRY SO THAT COMPLIANCE WILL BE MADE SIMPLER AND LESS COSTLY, THEREBY FACILITATE INDUSTRIES TO COMPLY.***
- ***INDUSTRY NEEDS HELP AND ASSISTANCE AND SIMPLIFIED LEGISLATION TO MEET THE CHALLENGES AND SURVIVE IN A GLOBALISED ENVIRONMENT.***
- ***NON-COMPLINCE WITH REGULATORY REQUIREMENT CAN CALL INTO QUESTION THE VALIDITY OF ISO , MSQA. GREEN BUILDING CERTIFICATION AND INSURANCE VALIDITY.***

- THE ROLE AND DUTIES OF COMPETENT PERSONS INCLUDING COMPETENT ENGINEERS MUST BE “BLUE COLLAR WORK “ –
- THIS WAS THE ORIGINAL CONCEPT OF COMPETENT PERSONS .
- THIS IS NOW SHIFTING INTO “WHITE COLLAR “ WORK .
- FOREIGN WORKERS ARE GRADUALLY BUT SURELY TAKING ON THIS BLUE COLLAR WORK VERY SUCCSSFULLY .
- THIS IS WORRYING .
- THIS TREND MUST BE ARRESTED AND REVERSED

- LARGE NUMBER OF INSTALLATIONS ARE NOT COMPLYING AND WILL CONTINUE TO DO SO .
- THE NEED FOR RESIDENT COMPETENT PERSONS FOR SOME SMALLER INDUSTRIES AND INSTALLATIONS MUST BE REVIEWED.
- ***THERE MAY BE A NEED TO INTRODUCE “TRAINED PERSONS” , TRAINED BY THE INDUSTRY BASED ON GUIDELINES SET BY ST, REPLACING RESIDENT COMPETENT PERSONS FOR CERTAIN SMALLER INDUSTRY AND SYSTEM AS IS PROVIDED FOR UNDER THE FACTORIES AND MACHINERY ACT IN RESPECT TO CERTAIN MACHINERY.***

THANK YOU