

WORK ACCIDENTS IN CAIRO NORTH POWER STATION

Thesis

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In Public Health.

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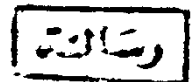
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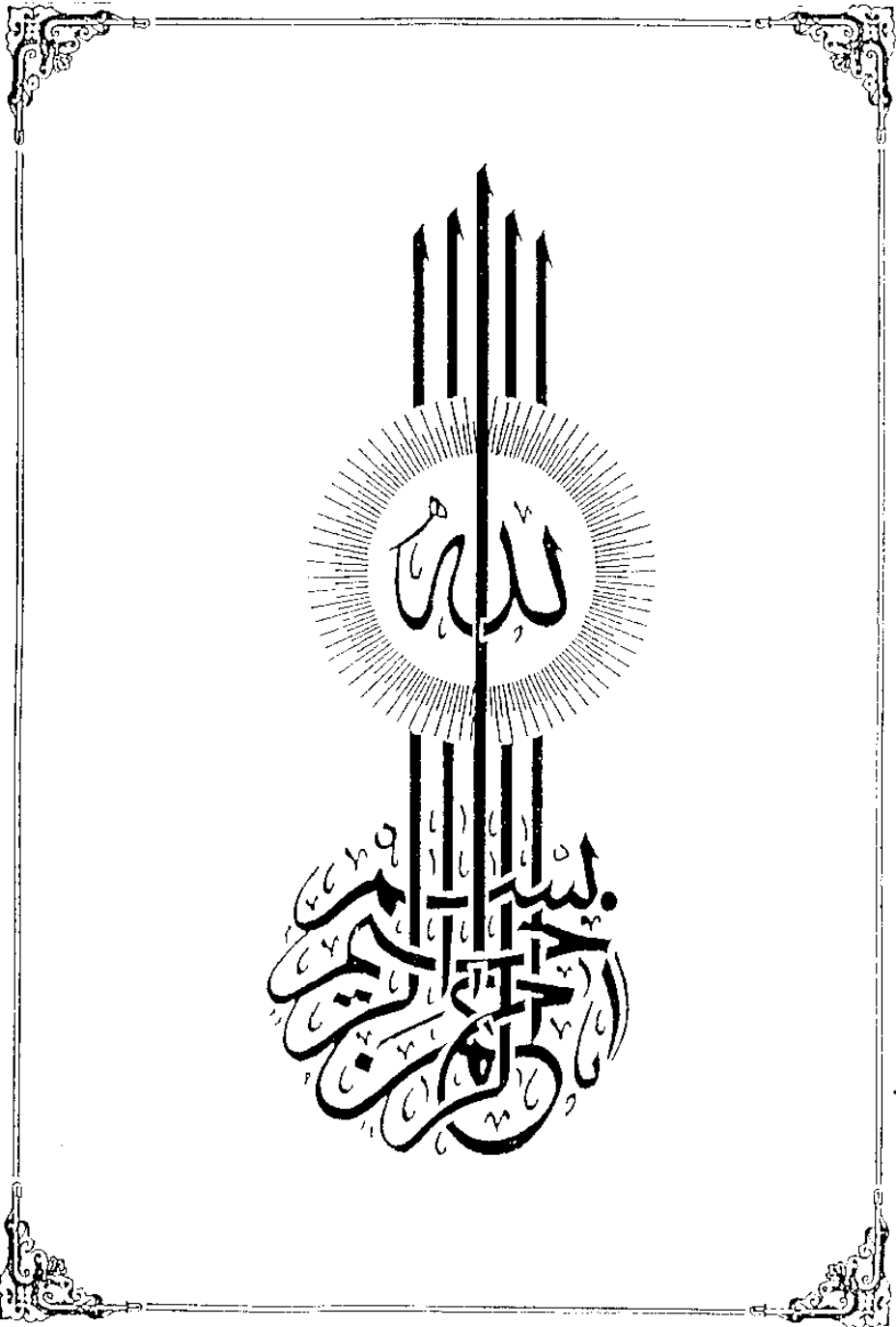
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The first power generating station was established in Shubra El Khema in Cairo 1932 for feeding the Metro network, the Tram and Heliopolis district. (The Yearly Annual Electricity Statistical Report, 1979).

Baptidanov & Tarasov stated that the electric energy or power is produced by special plant housed in structures comprising what are called Power Stations and within which energy is generated from other forms of energy (the chemical energy of fuels, the energy of falling water, of winds, of nuclear fuels etc.).

The electric energy produced by power stations is fed by them into overhead transmission or underground cable lines for distribution to various consumers. (The Yearly Annual Electricity Statistical Report, 1979).

Depending on what kind of energy is used for producing the electric energy, Roscin (1971) classified the Power Stations into:

(1) Thermal Power Stations:

These power stations, which can be built reasonably quickly and economically, are encountered most commonly. Here energy is produced by thermal machines which convert the raw stored energy of fuels such as coal, oil, natural gas, peat.... etc., into kinetic energy. The basic operations are mechanical and partly automatic.

(2) Nuclear Power Stations:

Here electric power is provided by thermal machines which transform the heat given off by a nuclear reactor.

(3) Hydro-Power Stations:

Energy derived from flowing water is converted into electrical energy by hydraulic turbines and generators.

(4) Wind Power Stations:

(5) Other Kinds of Power Stations:

Nowadays, there are 17 generating power stations in Egypt connected with the united electrical network with full capacity of 4229 mega watt extending from Aswan to Alexandria with voltages 500 K.V., 220 K.V., 132 K.V. The most common encountered power stations in Egypt is the Thermal Stations, however, the policy of electric production depends upon the full usage of the available electric water power and the other non-used sources of water till now such as El Kattara and the Nile Barrages. The future trends are the expansion in the usage of the natural gases as a fuel to the Thermal Stations and the establishment of Atomic Power Stations where the economic and technical studies proved that they will be more economic than the traditional Power Stations. Thus it can be seen that production of electricity is expected to increase in the coming years. (The Yearly Annual Electricity Statistical Report, 1979).

Exhaustive review of Egyptian literatures revealed no studies concerning occupational accidents in Electric Power Stations. This stimulated the present study with the aim of evaluating the problem of occupational safety in the field of generation of electricity.

Studying all generating Power Stations is too extensive for such a period of time, so it was decided to concentrate on Cairo North Power Station being one of the eldest Thermal Power Stations, as well as being considered as a model to other Thermal Power Stations; since the same technology is used in all of them.

2 - AIM OF THE STUDY

Aim of the Study

This work aims at studying the causes of accidents in Cairo North Power Station as a model of Thermal Power Stations in Egypt. It also aims at finding out the suitable recommendations for prevention of accidents in this Station.

3 - REVIEW OF LITERATURE

3.1 Definitions and Classifications

3.2 Epidemiologic Aspect of Accidents

3.3 Egyptian Legislations of Work Accidents

DEFINITIONS AND CLASSIFICATIONS

Definitions:

In no field, definitions are so important than in the field of industrial accidents. To avoid confusion and misinterpretation definitions of accidents, injuries, types of accidents,...etc., should be sharp and clear. It took a long time to standardize terms for international comparisons. Heinrich (1950) defined accident as an unplanned and uncontrolled event in which the action or reaction of an object, substance, person or radiation results in personal injury. The International Labour Office, Geneva (1968) defined an accident as unexpected, unplanned occurrence which may involve an injury.

The accidental injury was defined as the event which leads to personal disability which may be death, permanent or temporary disability. (Cloquet, 1971).

The Tenth International Conference of Labour Statisticians (1962) established international definitions of fatalities, permanent disablement and temporary disablement as follows:

- (1) Fatalities: accidents resulting in death.
- (2) Permanent disablement: accidents resulting in permanent physical or mental limitation or impairment.
- (3) Temporary disablement: accidents resulting in incapacity for work for at least one full day beyond the day on which the accident occurred, irrespective of whether the days of incapacity were days on which the victim would otherwise have been at work.

- (4) Other cases: accidents resulting in incapacity for work lasting less than the period defined under (3) and not involving permanent disablement.

The work injury, was defined by the National Safety Council (1950) as those which arise out of and in the course of gainful work. This definition is in consistence with the definition of work injuries in our Egyptian law.

According to the Egyptian law No. 79 for the year 1975, the compensable work injury was defined as:

- (1) Injury by one of the prescribed occupational diseases.
- (2) Injury resulting from an accident occurring during work or because of it.
- (3) Injury resulting from oppression or overexertion of work.
- (4) Any accident that occur to the worker while travelling to or from work, under the condition that going forth and back must be without stop or delay or deviation from regular route.

Article No. 81 for the year 1976 defined oppression and overexertion resulting in work injury as every extra effort that exceeds the ordinary work done by worker, either during his actual work time or in any other time. It also considered the worker's death or permanent disablement resulting from oppression or overexertion from work as a work injury.

Commuting accidents:

A commuting accident means an off the job accident

sustained by a worker during his travel from his home to his place of work or during his return journey home. The journey may be on foot or on any type of vehicle either owned by himself or his employer or by a transport undertaking. (Cloquet, 1971). In numerous countries, it has been ascertained that, while the frequency of reported commuting accidents is less than that of working accidents, the situation is totally reversed as regards serious accidents.

The I.L.O. Employment Injury Benefits Recommendation (1964) No. 121, stipulates that all members should, under prescribed conditions, treat as industrial accidents those accidents sustained while on the direct way between the place of work and:

- 1- the employee's principal or secondary residence, or
- 2- the place where the employee usually takes his meals, or
- 3- the place where he usually receives his remuneration.

(Cloquet, 1971).

Classification of Industrial Accidents:

As the industrial accidents, are the product of environmental and human factors acting in various combinations, it was necessary to control such accidents by the compilation of employment injury statistics, having detailed data showing the causes and types of accidents, the industries or occupations in which they occur and the severity of the resultant injuries. The American National Standards Institute classified the accident factors into seven classes:

- 1- Nature of injury: identifies the injury in terms of its principal physical characteristics.
- 2- Part of the body affected: identifies the part of the injured persons body directly affected by the injury previously identified.
- 3- Source of injury: identifies the object, substance, exposure or bodily motion which directly produced or inflicted the previously identified injury.
- 4- Accident type: identifies the event which directly resulted in the injury.
- 5- Hazardous condition: identifies the hazardous physical condition or circumstance which permitted or associated the occurrence of the previously named accident type.
- 6- Agency of accident (or agency of accident part): identifies the objects, substance or premises in or about which the previously named hazardous condition existed.