

## BENEFIT OF ELECTRICAL SAFETY

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Electrical dangers have always been recognized, but daily serious injuries, deaths, and property damage occur. Electrical safety is essential. Statistics and facts are regularly compiled by organizations like the National Safety Council and the United States Department of Labor. The significance of electrical safety is illustrated in the table that follows.

Facts:

On the job, 97% of electricians have been shocked or hurt.

Every year, about 30,000 workers are shocked by electricity.

Every year, over 3600 disabling electrical contact injuries occur. The fourth leading cause of traumatic occupational deaths is electrocutions.

Each year, more than 2000 workers with severe Arc-Flash burns are admitted to burn centers.

Ten Arc-Flash incidents are estimated to occur each day in the United States. Burn injuries account for 60% of workplace accidents that result in death.

Accidents at work cause the deaths of over 1,000 electrical workers each year. For severe electrical burns, medical expenses can exceed \$4 million per person.

Each electrical incident can cost more than \$15 million in total costs. Injuries at work cost Americans \$14.6 billion in 2002.

While it is fundamentally moral to safeguard workers from electrical hazards, every facility must implement an extensive Electrical Safety Program due to legal and other requirements. Additional advantages of Electrical Safety programs include meeting OSHA regulations, lowering insurance premiums, minimizing downtime and repair costs, and so on.

Thermal and magnetic forces are applied to the electrical system when electrical faults occur. Fires, explosions, and severe arcing accompany these forces, which can severely harm equipment. Personnel are frequently killed or seriously injured as a result of such violent damage. Medical care, equipment replacement, and repairs can all cost millions of dollars. Damaged goods and lost production are also important considerations. The cost of OSHA fines and litigation are two additional significant factors.

A complete manufacturing process or assembly plant may be shut down by severe electrical faults, sending hundreds or thousands of workers home for weeks while repairs are made. Additionally, it is possible for a single tragic incident to permanently shut down a plant.

Employers and employees alike will be protected from the following hazards by implementing and adhering to a well-designed Electrical Safety Program:

Electrical safety is not an option—it is absolutely necessary for workers and employers alike. Even the simplest electrical system can become dangerous. OSHA citations and fines. Increased insurance and worker's compensation costs. Lost or unusable materials. Unplanned equipment repair or replacement costs. Possible bankruptcy. Shock, arc flash, and arc blast pose risks to personnel installing or servicing these systems frequently if proper procedures are not implemented. A basic understanding of electric circuits is required to eliminate or reduce these threats. A brief synopsis is provided below.

## *References:*

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