Safe Work Procedures for Excavating in the Vicinity of Underground Electrical Plant

First Edition

These procedures have been developed by
the Utility Contractors' Association of Ontario Inc.
in cooperation with
the Electrical & Utilities Safety Association of Ontario

TABLE OF CONTENTS

GENERAL PROCEDURES

SPECIFIC PROCEDURES (Do's and Don'ts)

ELECTRICITY

9.0 EXCAVATION AFTER TEST HOLES ARE COMPLETED

9.1 Where test holes in an area have been completed, and the plant has been located, mechanical excavation may take place provided the following procedures are used:

(a) Wherever possible, mechanical excavating equipment shall be operated ***parallel*** to the direction of the plant when the excavation is within the locate limits.

(b) Hand dig within 0.3 metre (1 foot) of the buried plant both horizontally and vertically, and proceed with caution with mechanical excavation. (Specific Procedure 2.0 WORKING WITH DIRECT BURIED PLANT on page 22).

Do - use suitable barriers around the opening of confined spaces in order to protect workers and the general public

Do - have a competent worker stationed outside confined space for emergency purposes whenever a worker is in a confined space

Do - have a means of communications between the worker in a confined space and the worker stationed outside the confined space

Don'ts

Don't - ever enter a confined space without another worker positioned at the opening to the confined space

Don't - enter a confined space without wearing a full body harness and life line attached

Don't - attempt to rescue a worker from a confined space until emergency services have been contacted

EFFECTS OF ELECTRICITY

LESS THAN 1 AMPERE CAN KILL!

1000	1 Ampere
400	Risk of burns, severity or which increases with strength of current
300	Breathing stops
80	Normal pumping of heart can stop (ventricular fibrillation)
50	Breathing very difficult, suffocation possible
30	Severe shock
20	Muscular contractions, breathing difficulty begins, cannot let go
10	Cannot let go
8	Painful shock
5	Trip setting for Ground Fault Circuit Interrupter protection
2	Mild shock
1	Threshold of sensation
0	1 Milliampere = 1/1,000 of an ampere

Typical electric current pathways that stop normal pumping of the heart.

Head to Foot

Hand to Opposite Foot

Hand to Hand

Electrically resistant personal protective equipment reduces the risk of injury or death.