



ELECTRIC AND MAGNETIC FIELDS (EMF)

INTRODUCTION

Electric and magnetic fields are often referred to as “electromagnetic fields,” or EMF. There is concern that EMF may affect your health.

HOW IS EMF PRODUCED?

Voltage is the difference in electric potential between two points. This voltage creates an *electric field* between those points. Now suppose that an electric connection is made between those two points, so that there is an electric current. This current produces a *magnetic field*. Magnetic fields occur whenever there is current flow.

IS EMF HARMFUL?

Many scientific tests have been and are still being conducted by governmental and private agencies to determine if EMF is harmful to our health. Most studies to date indicate that there is no evidence of significant health problems from EMF.

HOW DO I MINIMIZE EXPOSURE?

- Do not place your body between the torch and work cables. Route cables on the same side of your body.
- Route the welding cables close together. Secure them with tape when possible.
- Connect the work cable to the workpiece as close to the weld as possible.
- Keep the welding power source and cables as far away from your body as possible.
- Never coil the torch or work cable around your body.

INFORMATION SOURCES

Occupational Safety and Health Administration (OSHA). *Code of Federal Regulations*, Title 29 Labor, Chapter XVII, Parts 1900 to 1910, Order No. 869-019-00111-5, available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Environmental Protection Agency (EPA). *Questions and Answers about Electric and Magnetic Fields*, National Institute of Environmental Health Sciences (of Dept. of Health and Human Services) and Dept. of Energy, available from Miles Kahn, P.O. Box 37133, Washington, DC 20013-7133.

United States Congress, Office of Technology Assessment. *Biological Effects of Power Frequency Electric & Magnetic Fields—Background Paper*, OTA-BP-AE-63, May, 1989, available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

American Conference of Governmental Industrial Hygienists (ACGIH). *Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices*, available from ACGIH, Inc., 6500 Glenway Ave., Cincinnati, OH 45211.

National Electrical Manufacturers Association (NEMA). *Q & A: Biological Effects of Electric & Magnetic Fields*, available from NEMA, 2101 L Street, N.W., Washington, DC 20037.