

INTRODUCTION TO NUCLEAR POWER PLANTS

OBJECTIVE:

The content of this course is introductory in nature. Its focus is to introduce the participants to the basics of the Nuclear Power Plant (NPP). This one-day course has two aspects to it;

1. The first part of the course covers the basic functioning of a NPP; an introduction to the basic principles behind the production of electricity from the fission reaction, layout of a typical NPP, the basic process systems required, the safety systems, regulatory requirements, operational aspects of the NPP, and accident considerations.
2. The second part reviews the differences between the two concepts under consideration for new construction in Ontario today; CANDU Enhanced Heavy Water Reactor, CANDU-6 and the Westinghouse Pressurized Light Water Reactor (PWR), AP-1000.

CONTENTS: A one day course consisting of the following:

- **INTRODUCTION TO A NUCLEAR POWER PLANT**
 - How a NPP Works; Fission to Electricity; Fission Reaction
 - Steam Production; Electricity Generation
- **LAYOUT OF A NPP**
- **REGULATORY REQUIREMENTS**
- **BASIC SYSTEMS**
 - Process Systems; Safety Systems; Auxiliary Systems
- **OPERATION OF A NPP**
 - Startup; Steady State; Shutdown
- **ACCIDENT CONDITIONS**
- **SPECIFIC CONCEPTS**
 - CANDU Heavy Water Reactor
 - *Reactor; Fuel Type; Containment; Other Systems*
 - Westinghouse Pressurized Water Reactor
 - *Reactor; Fuel Type; Containment; Other Systems*

WHO SHOULD ATTEND?

This course is aimed at personnel who have little or no knowledge on how the typical NPP works. With the revival of the nuclear industry underway in North America, organizations wanting to participate in this new development will gain an understanding of the basics. This will allow them to communicate with a level of understanding as to how they may participate in this new round of construction. It will also be a very useful introduction for staff who will be supporting the various activities of their companies providing them with the opportunity to participate on a more complete and useful level.