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**Fundamentals of
CANDU Reactor
Nuclear Design
A Lecture Series
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FUNDAMENTALS OF CANDU REACTOR NUCLEAR DESIGN

A Lecture Series

by

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ABSTRACT

This document contains the material presented in seven lectures at the Winter College on Nuclear Physics and Reactors at Trieste 22 January - 28 March, 1980. They constitute part of the course on Operational Physics of Power Reactors given during March. Specifically, the lectures are written for Part 1.1 of the first week's lectures "Fundamentals of Pressurized Heavy Water Reactors". However, some of the topics presented during the second week pertaining to "Power Operations, Measurement and Methods of Calculation of Power Distributions" are also covered in this overview of CANDU nuclear design.

A physical description of a CANDU reactor of the 600 MWe size is given, with particular emphasis on the core design and nuclear performance characteristics. The methodology used in the physics analysis associated with the design process is outlined, and typical results of the analysis presented. Finally, the determination of the initial fuel load is described and the physics analysis and tests associated with commissioning are summarized.

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