

Errata for the Essential CANDU

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Summary: This document contains an errata list, chapter by chapter for The Essential CANDU, first edition:

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Chapter 1 Introduction to Nuclear Reactors

- No errata to report.

Chapter 2 Genealogy of CANDU Reactors

- No errata to report.

Chapter 3 Nuclear Processes and Neutron Physics

- No errata to report.

Chapter 4 Reactor Statics

- No errata to report.

Chapter 5 Reactor Dynamics

1. Equation 101 should '0=...' for both equations as follows:

$$0 = \frac{\rho_1 - \beta}{\Lambda} \hat{n}(t) + \sum_{k=1}^{k_{\max}} \lambda_k \hat{C}_k(t) \quad (t < t_0)$$

$$0 = \frac{\rho_2 - \beta}{\Lambda} \hat{n}(t) + \sum_{k=1}^{k_{\max}} \lambda_k \hat{C}_k(t) \quad (t > t_0)$$

Chapter 6 Thermalhydraulic Design

- No errata to report.

Chapter 7 Thermalhydraulic Analysis

- No errata to report.

Chapter 8 Plant Systems

- No errata to report.

Chapter 9 Plant Operations

1. The title for Figure 15 should be bold and centred.
2. The title for Figure 29 should be below the figure, not above.

Chapter 10 Instrumentation and Control

- No errata to report.

Chapter 11 Electrical Systems

- No errata to report.

Chapter 12 Radiation Protection and Environmental Safety

- No errata to report.

Chapter 13 Reactor Safety / Safety Analysis

1. Section 4.1.3 Safety goals in Canada: under "These are developed into design goals:" the headings should read "2. Small Release Frequency" and "3. Large Release Frequency", not Low Release Frequency and High Release Frequency.
2. In the paragraph following the above, "replace Low Release Frequency" with "Small Release Frequency" in two occurrences.
3. Section 5.3.1: Replace the second paragraph beginning "For economic reasons..." with the following:
"For economic reasons, another subsystem is provided which can dump up to 60% steam directly from the steam generators to the condenser. This is used for poison prevention—that is, if the grid is lost, the reactor will reduce power quickly to a level just sufficient to prevent a poison-out due to xenon build-up. Enough steam still goes to the turbine so that the turbine-generator can supply house loads; the rest is dumped directly to the condenser, by-passing the turbine. Because (unlike steam dump to atmosphere) the secondary water is recycled from the condenser back to the steam generators, it is possible to do this for considerable periods of time. This is a big advantage in the case of a prolonged loss of electrical grid; if the reactor can avoid a trip when the grid is lost and is kept running, it remains ready to supply power as soon as grid stability is restored."

Chapter 14 Nuclear Reactor Materials

- No errata to report.

Chapter 15 Nuclear Process Systems Chemistry and Corrosion

- No errata to report.

Chapter 16 Regulatory Requirements and Licensing

- No errata to report.

Chapter 17 Fuel

- No errata to report.

Chapter 18 Fuel Cycles

- No errata to report.

Chapter 19 Storage and Disposal of Irradiated Fuel

- No errata to report.

Chapter 20 Fuel Handling and Storage

- No errata to report.

Chapter 21 Incore Fuel Management

- No errata to report.

Author Biographies

- No errata to report.

Abbreviations

- No errata to report.