

# **FINAL SAFETY ANALYSIS REPORT**

## **CHAPTER 4**

### **REACTOR**

## **4.0 REACTOR**

This chapter of the U.S. EPR Final Safety Analysis Report (FSAR) is incorporated by reference.

**4.1 SUMMARY DESCRIPTION**

This section of the U. S. EPR FSAR is incorporated by reference.

## 4.2 FUEL SYSTEM DESIGN

This section of the U. S. EPR FSAR is incorporated by reference with the following supplemental information.

Pursuant to 10 CFR 52.7 and 10 CFR 52.93, {PPL Bell Bend, LLC} has requested an exemption from the requirements of 10 CFR 50.46, Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors, and 10 CFR 50, Appendix K, ECCS Evaluation Models, paragraph I.A.5, regarding the use of Zircaloy or ZIRLO as fuel cladding material. The exemption request is consistent with the U.S. EPR design and is related to the proposed use of the M5™ advanced zirconium alloy for the fuel rod cladding and fuel assembly structural material. The exemption request is described in COLA Part 7.

**4.3 NUCLEAR DESIGN**

This section of the U. S. EPR FSAR is incorporated by reference.

**4.4 THERMAL-HYDRAULIC DESIGN**

This section of the U. S. EPR FSAR is incorporated by reference.

**4.5 REACTOR MATERIALS**

This section of the U. S. EPR FSAR is incorporated by reference.

**4.6 FUNCTIONAL DESIGN OF REACTIVITY CONTROL SYSTEMS**

This section of the U. S. EPR FSAR is incorporated by reference.