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### **NRSC-3**

## **Safety and Economics of Advanced Light Water Reactors**

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### **Abstract:**

The main design goals for nuclear power stations are the safe and economic operation. Recently, the nuclear companies designed advanced light water reactors (LWRs) with new recycled nuclear fuel with the purpose of prevention of proliferation and reducing the nuclear waste.

These reactors, such as, AP1000, APWR, ABWR, EPR and ESBWR were characterized by, high capacity factor, high burn-up, long operating cycle, shorter construction schedule, increased plant life, more passive safety and reduced need for operator actions. The economics of these plants will be compared with other conventional and renewable energy sources such as, oil, gas, hydro, coal, wind and solar. It was concluded that the nuclear energy option should be introduced as fast as possible in Egypt because it is clean, safe and economic energy source.

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