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1.5.5. Structure of the Nuclear Emergency Preparedness Act1.5.6. Nuclear Emergency Preparedness Act guidelines on emergency measures; 1.6. Conclusions; References; Chapter 2: The Fukushima nuclear power plant accident: the main sequence of events; 2.1. Introduction; 2.2. Outline of primary facilities at the Fukushima plant; 2.2.1. Reactor building facilities and components; Drywell (D/W); Suppression chamber (S/C); Safety relief valve (SRV); Vent valve; Diesel-driven fire pump (D/DFP); 2.2.2. Electrical power facilities; Metal-clad (M/C) switch gear; Power center (P/C); Direct current (D/C)
2.2.3. Cooling systemsCore cooling systems during normal operation; Core cooling systems during normal shutdown (including after emergency shutdown [SCRAM]); Emergency cooling systems; Isolation condenser (IC); Reactor core isolation cooling system (RCIC); High-pressure coolant injection system (HPCI); Fire protection; 2.3. The sequence of events from earthquake and tsunami to station blackout (SBO); 2.3.1. Events immediately after the earthquake; March 11, 2011, about 14:46: magnitude 6-strong earthquake hits; March 11, about 14: 50: Unit 2 RCIC started manually
March 11, 2011, 14:52: Unit 1 IC started automaticallyMarch 11, 15:05: Unit 3 RCIC started manually; March 11, about 15:27: first tsunami wave; March 11, about 15:35: second tsunami wave; March 11, about 15:39: Unit 2 RCIC started manually just before the tsunami damage; March 11, 15:37-42: loss of all AC power; 2.3.2. Loss of electrical power; 2.4. Possible damage caused by the earthquake; 2.4.1. Primary facilities in the reactor building; 2.4.2. Other facilities; 2.5. The condition of Unit 1 after SBO; 2.5.1. March 11, up to 23:50 when abnormal CV pressure was recognized
March 11, about 15:37: IC isolation valves closed with fail-safe function

Sommario/riassunto

In March 2011 the Fukushima nuclear power plant (NPP) in Japan was hit by an earthquake and subsequent tsunami which resulted in the release of significant amounts of radioactive material. The incident led to the suspension of nuclear programmes by a number of countries. This book provides a definitive account of the accident. Outlines the main sequence of events of the 2011 Fukushima nuclear power plant accident, considers the responses of central and local government, and evaluates the response of the plant owner TEPCO.Describes and assesses the effectiveness of the evacuation process and s