

Technical Briefing of nuclear safety aspects of the situation in Japan

March 17 2011

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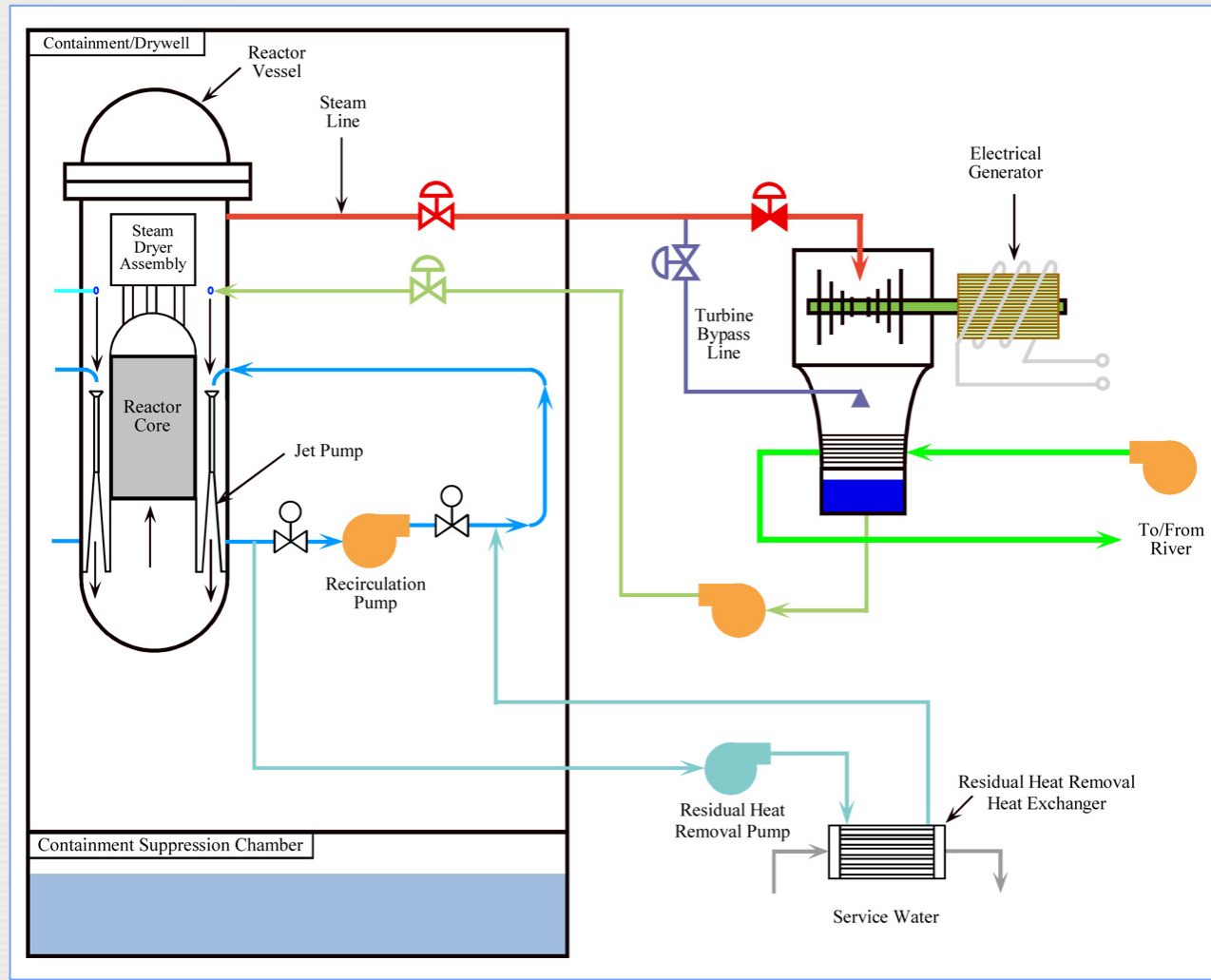
Director Nuclear Installation Safety, IAEA



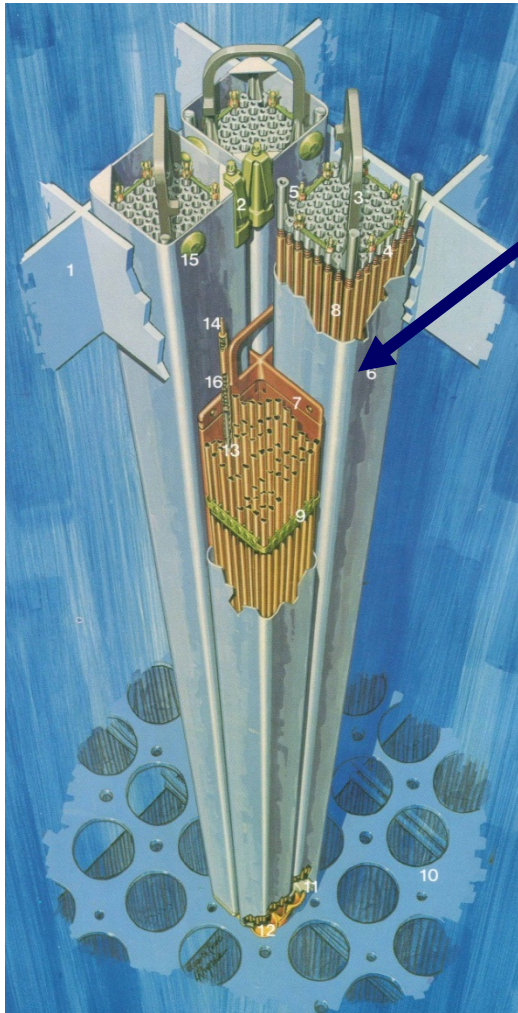
IAEA

International Atomic Energy Agency

Boiling Water Reactor (BWR)



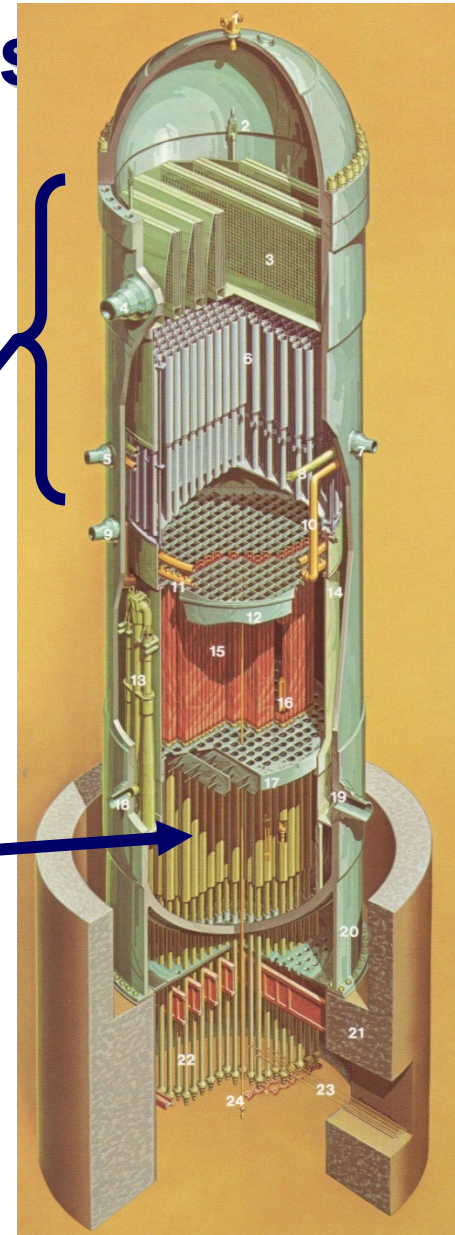
BWR Design Features



Fuel channels

RPV upper
internal structures

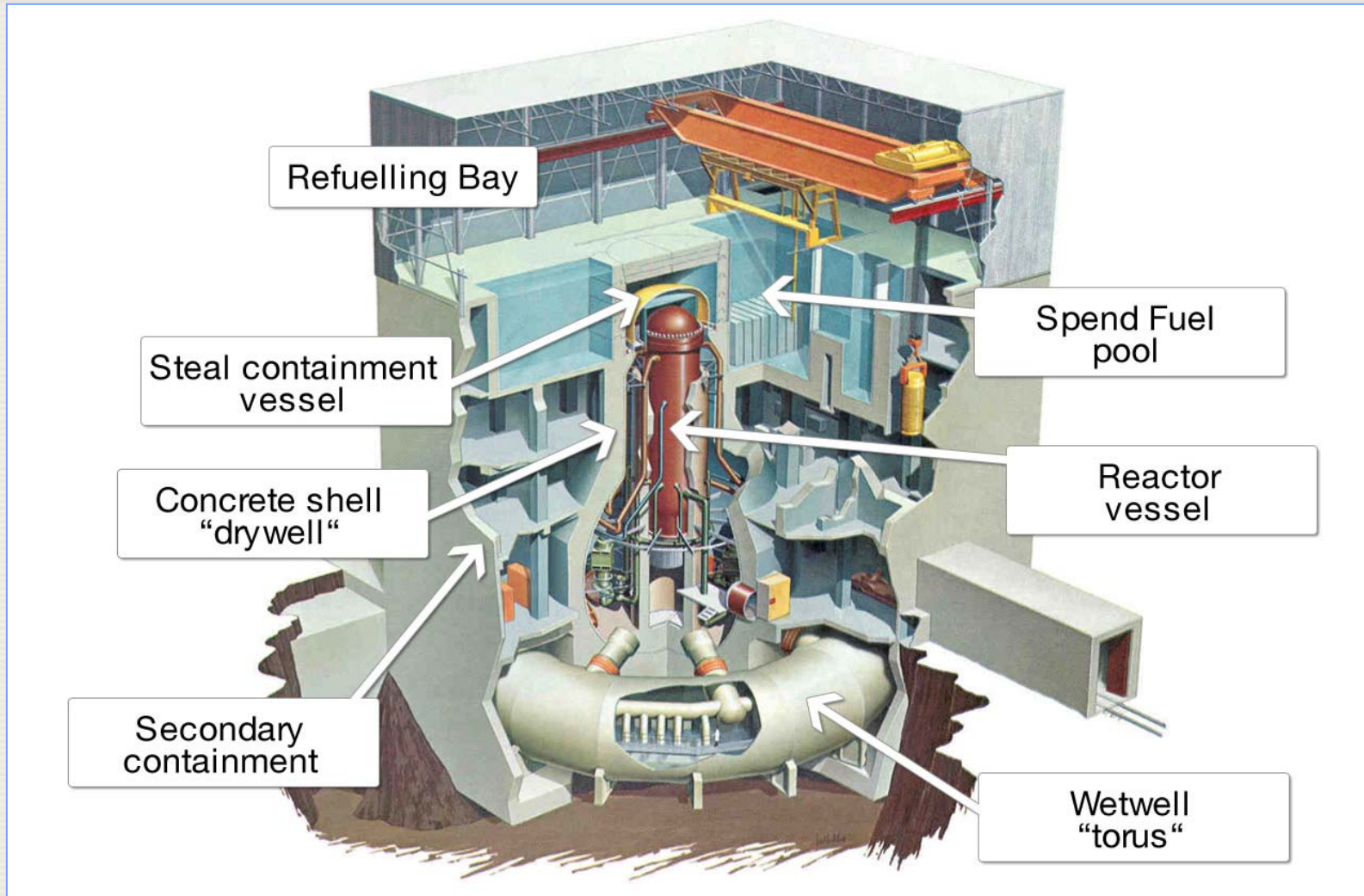
Large lower
plenum

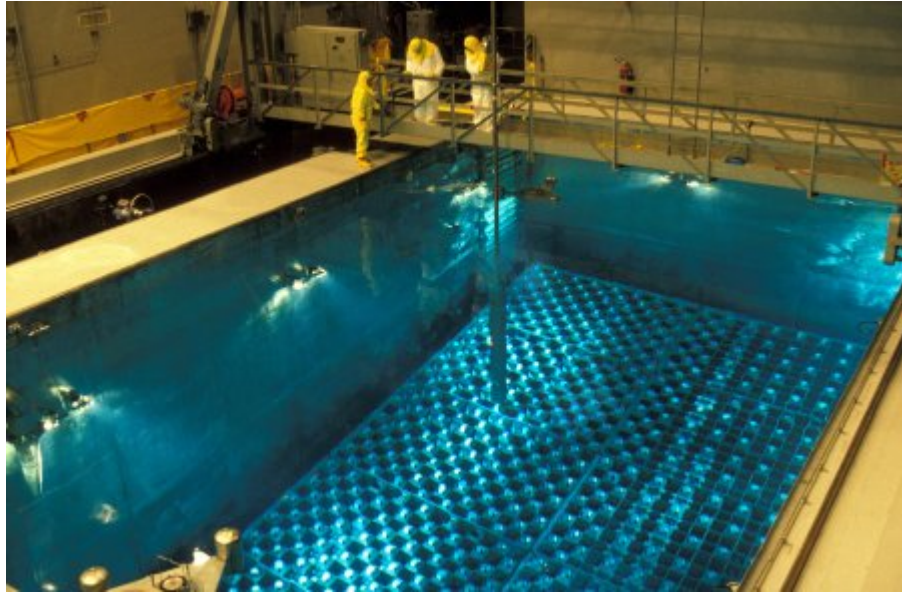


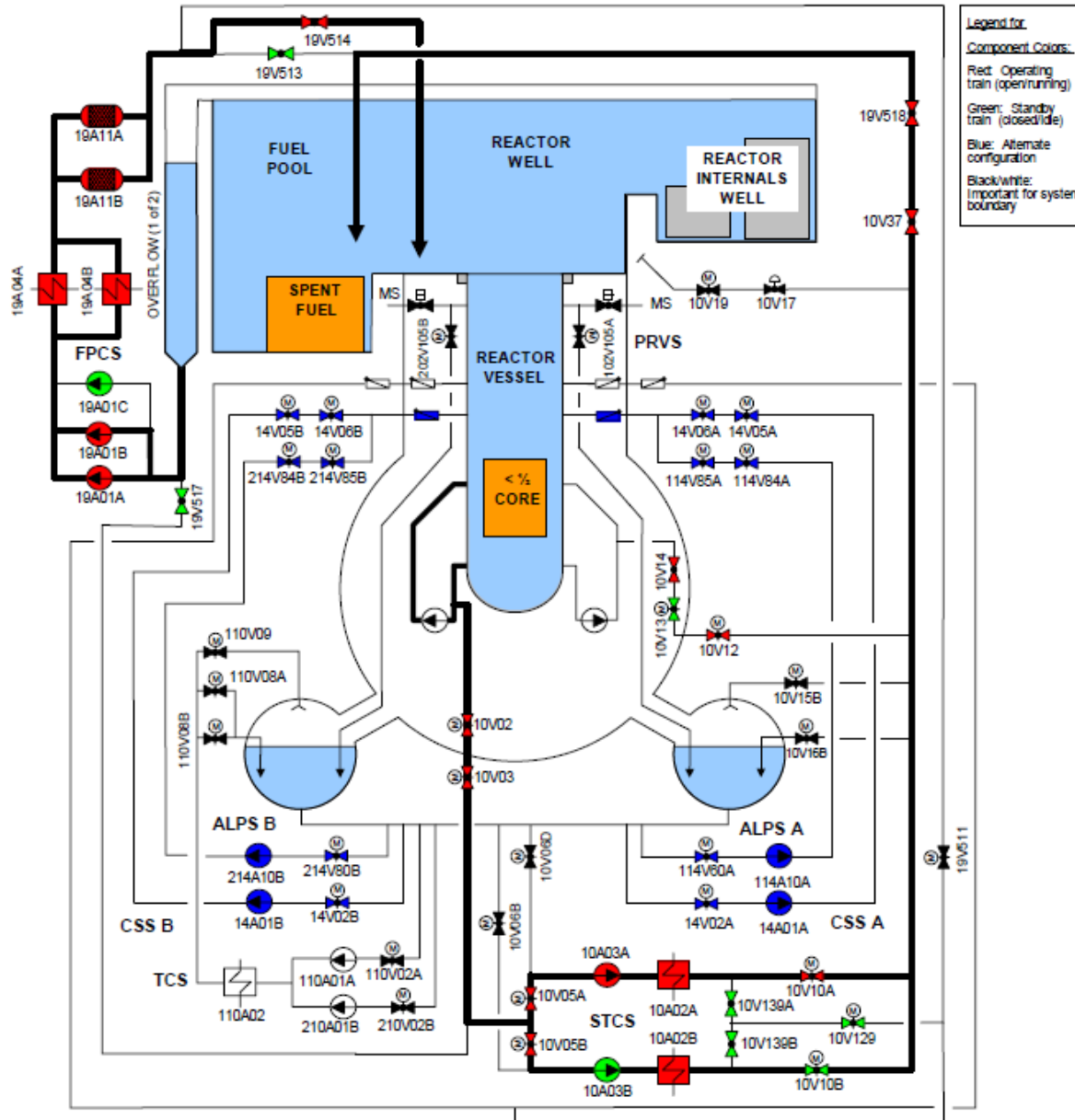
Key Plant Systems (Mark-I)

Safety Function	Design Frontline Systems
Control reactivity	<ul style="list-style-type: none"> • Reactor protection system. Insertion of fuel rods • A manually initiated standby liquid control system (SLCS) as back-up
Primary pressure protection	<ul style="list-style-type: none"> • Steam relief from the reactor vessel to the torus • Automatic depressurization system SRVs • Safety- relief valves (SRVs)
Maintain primary coolant inventory	<ul style="list-style-type: none"> • Feedwater/condensate injection system from condensate storage tank (CST) • Isolation condenser, RCIC (high pressure) • High pressure core injection (HPCI) • Low pressure injection (part of RHR), Low pressure core spray • Essential service water • Firewater system (after reactor depressurization)
Remove fuel decay heat	<ul style="list-style-type: none"> • Shutdown torus cooling system (STCS) • Torus cooling system (TCS) • Containment venting
Containment systems	<ul style="list-style-type: none"> • Containment and reactor building isolation systems • Containment depressurization system • Standby gas treatment system (SGTS) • Exhausting filtered air from secondary containment

BWR Mark I - Containment

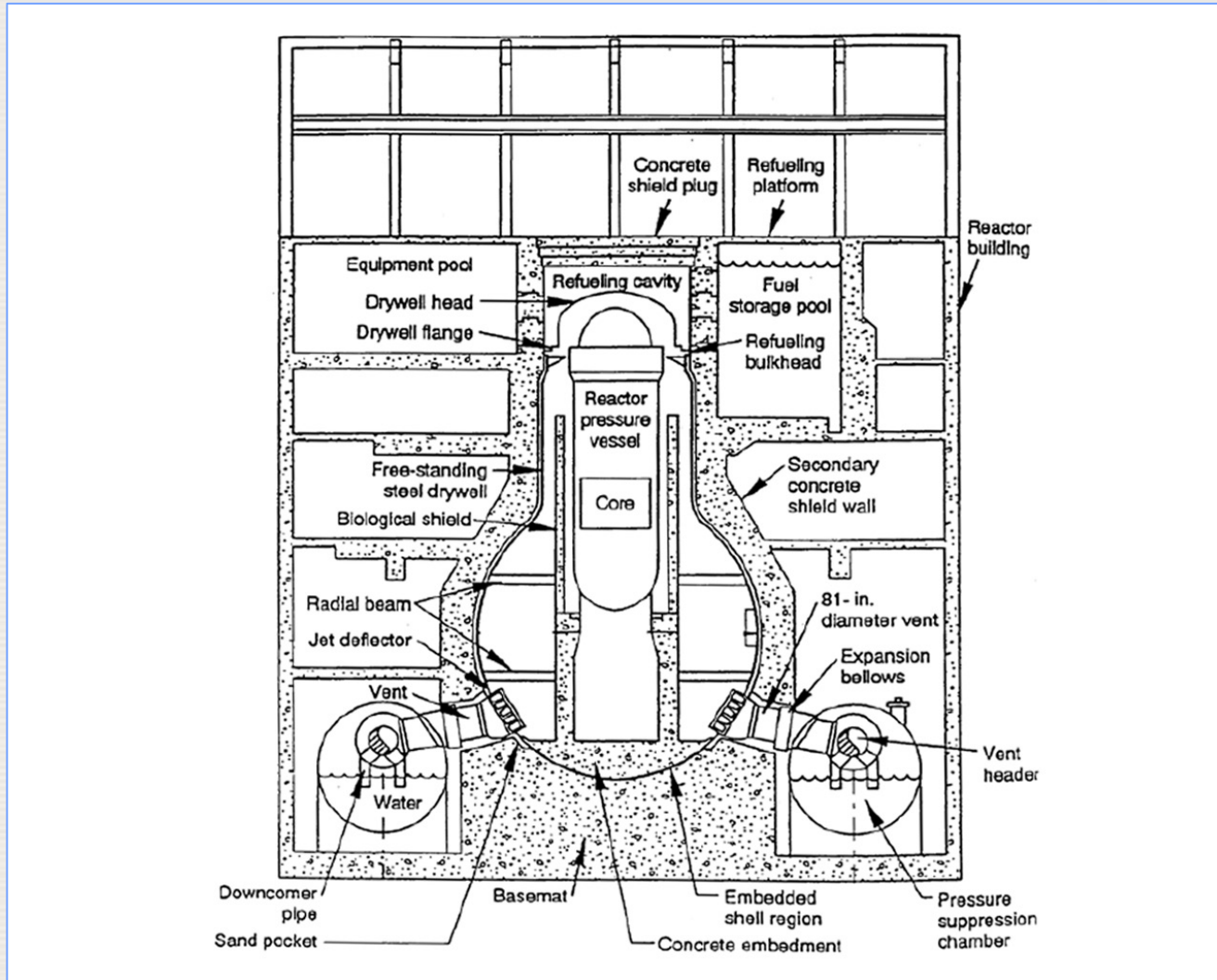








BWR Mark I Containment



Unit	1	2	3	4
Power	460/1380	784/2381	784/2381	784/2381
Type of Reactor	BWR-3	BWR-4	BWR-4	BWR-4
Status at the EQ occurred	Service – auto Shutdown	Service – auto Shutdown	Service – auto Shutdown	Outage
Core	Damage suspected	Damage suspected	Damage suspected	No fuel rods
Containment integrity	Not damaged	Damage suspected	No information	Not Damaged
AC power for cooling	Not Function	Not Function	Not Function	Not Function
Building	Severely damaged	Slightly damaged	Severely damaged	Severely damaged
Water level of RPV	Around half of F/A	Higher half of F/A	Around half of F/A	Safe
Pressure of RPV	Stable	Unknown	Stable	Safe
Containment Press.	Unknown	Stable	Stable	Safe
Water injection to RPV	Seawater	Seawater	Seawater	Not necessary
Spent Fuel Pool	No information	No information	Unknown	Unknown



Unit	5	6
Power	784/2381	1100/3293
Type of Reactor	BWR-4	BWR-5
Status at the EQ occurred	Outage	Outage
Core and Fuel	Not Damaged	Not Damaged
Containment int.	Not Damaged	Not Damaged
AC power for cooling	Not Necessary	Not Necessary
Building	Not Damaged	Not Damaged
Water level of RPV	Safe	Safe
Pressure of RPV	Stable	Safe
Containment Pressure	Stable	Safe
Water injection to RPV	Not necessary	Not necessary
Water injection to CV	Not necessary	Not necessary
Spent Fuel Pool Temperature	Slightly increasing	Slightly increasing

Date : March 17

Time : 12:00 UTC

	Severe condition
	Concern
	No immediate concern

