

# **BWR Description**

## **MIT Briefing about Fukushima Reactors**

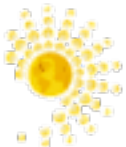
**Mujid S. Kazimi**

TEPCO Professor of Nuclear Engineering

Professor of Mechanical Engineering

Director, Center for Advanced Nuclear Energy Systems (CANES)

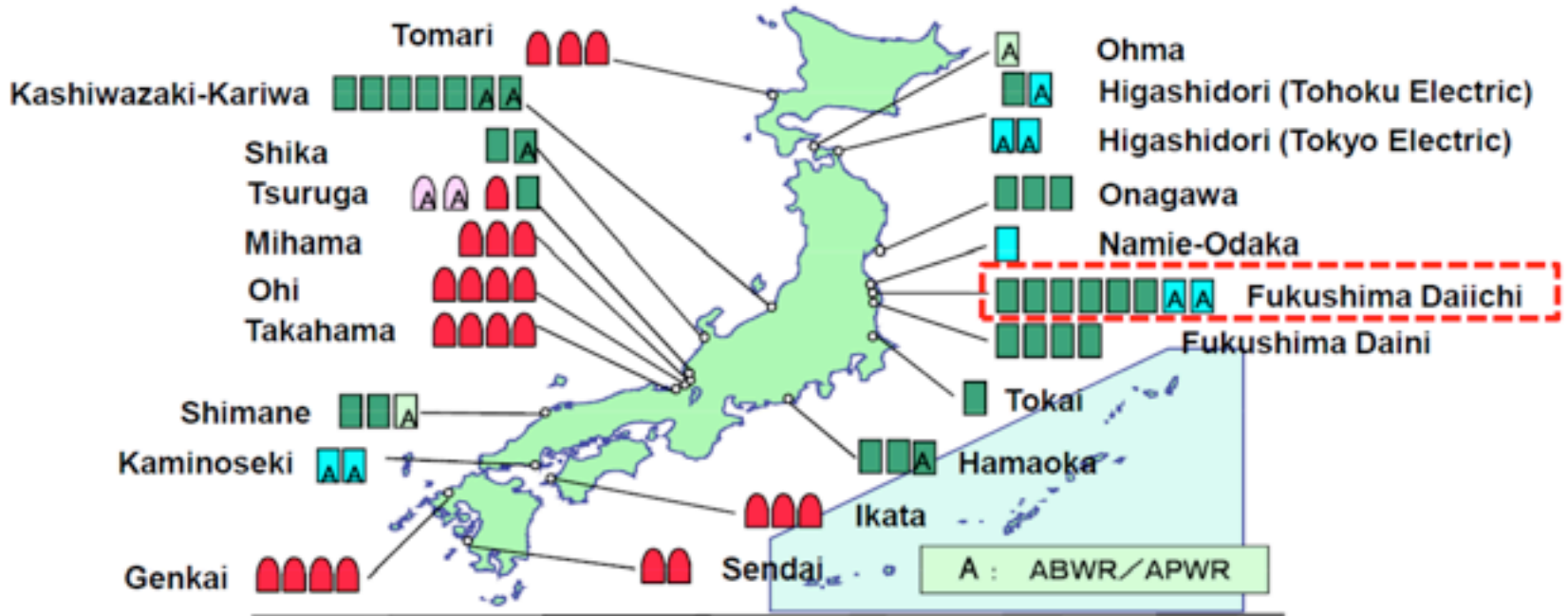
March 15, 2011



**CANES**  
Center for Advanced  
Nuclear Energy Systems



# Nuclear Power Plants in Japan



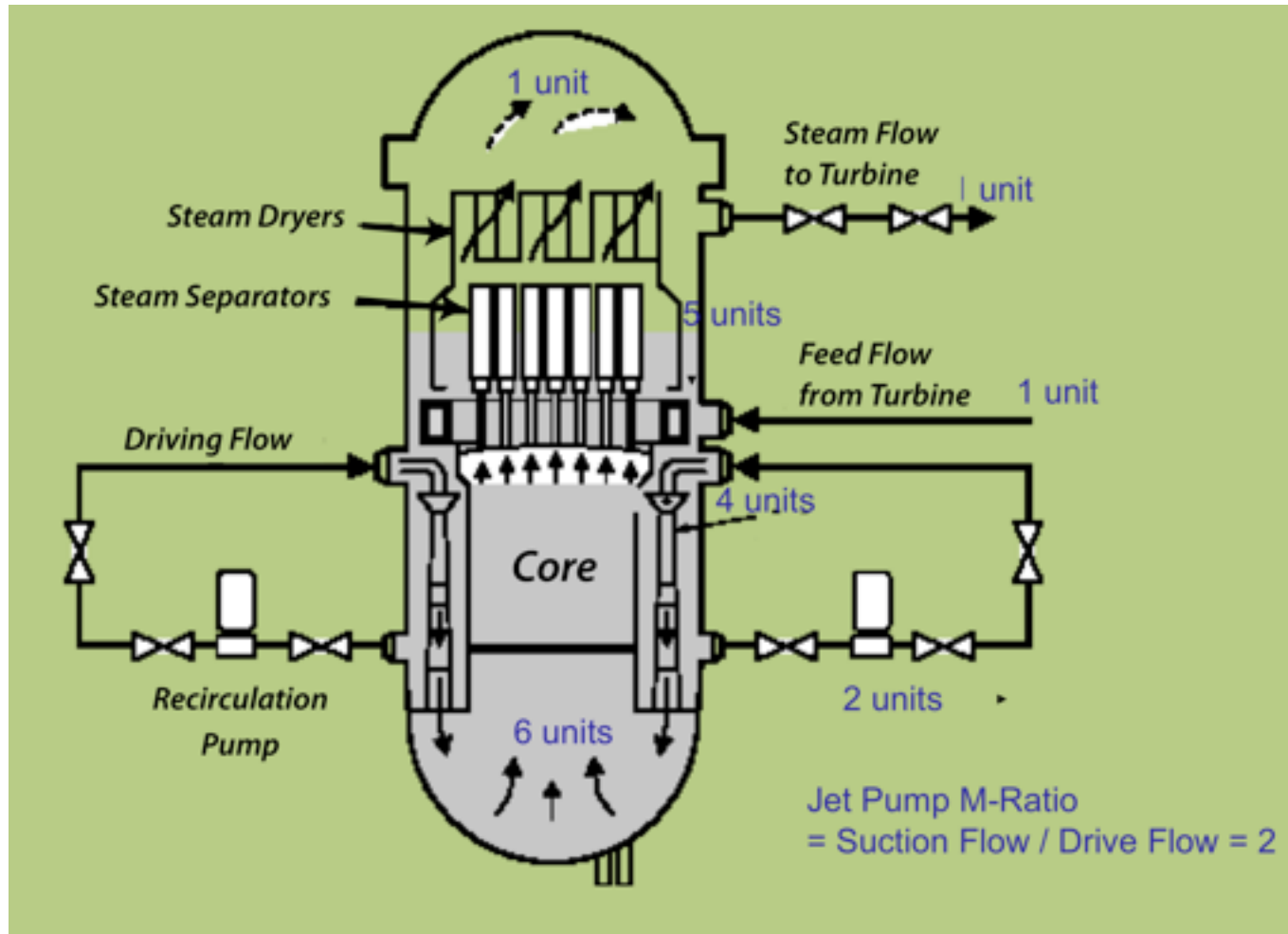
■ PWR In Operation 24 Units      ■ BWR In Operation 30 Units  
■ PWR Preparing for Construction 2 Units      ■ BWR Under Construction 2 Unit  
■ BWR Preparing for Construction 8 Units

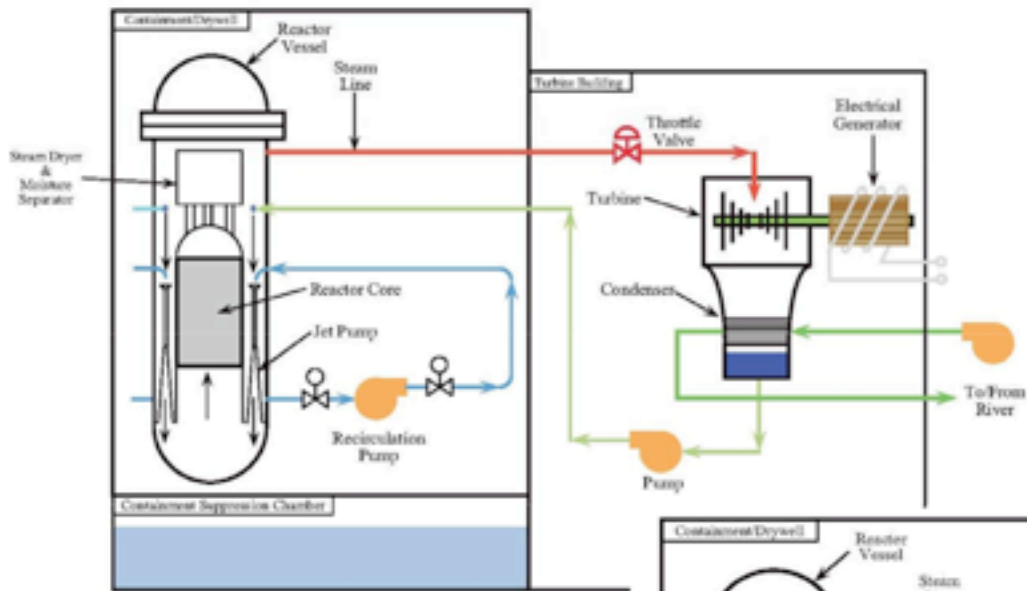
# Features of Fukushima I units

Unit	Type	Containment Type	First criticality	Electric power	Scheduled Shutdown	Constructors
Fukushima I – 1	BWR/3	Mk-1	Oct. 1970	460 MW	26 Mar '11	GE
Fukushima I – 2	BWR/4	Mk-1	July 18, 1974	784 MW	18 Jul '14	GE
Fukushima I – 3	BWR/4	Mk-1	Mar. 27, 1976	784 MW	26 Mar '16	Toshiba
Fukushima I – 4	BWR/4	Mk-1	Oct. 12, 1978	784 MW	12 Oct '18	Hitachi
Fukushima I – 5	BWR/4	Mk-1	Apr. 18, 1978	784 MW	18 Apr '18	Toshiba
Fukushima I – 6	BWR/5	Mk-2	Oct. 24, 1979	1,100 MW	24 Oct '19	GE
Fukushima I – 7 (planned)	ABWR	ABWR	Oct. 2016	1,380 MW		
Fukushima I – 8 (planned)	ABWR	ABWR	Oct. 2017	1,380 MW		

Commercial operation of Fukushima-1 Unit 1 : March 26, 1971  
 It is ready to decommissioning at this month.  
 It is one of the oldest NPP in Japan.

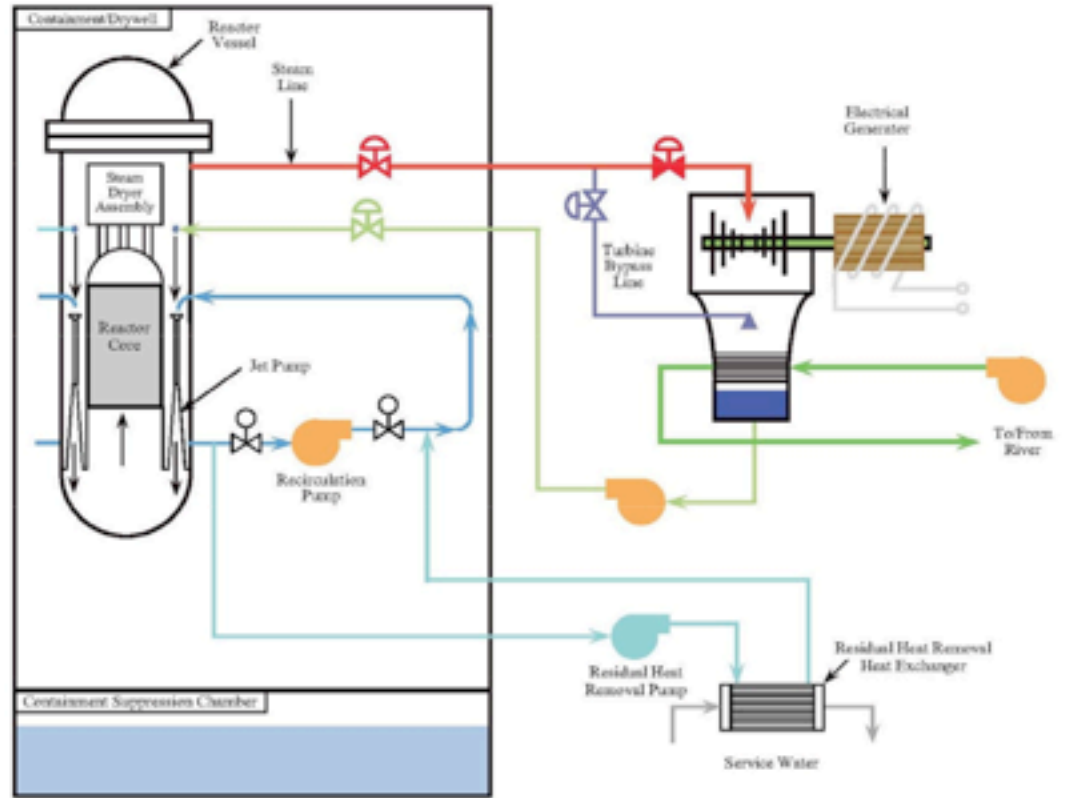
# BWR Steam and Recirculation Flow



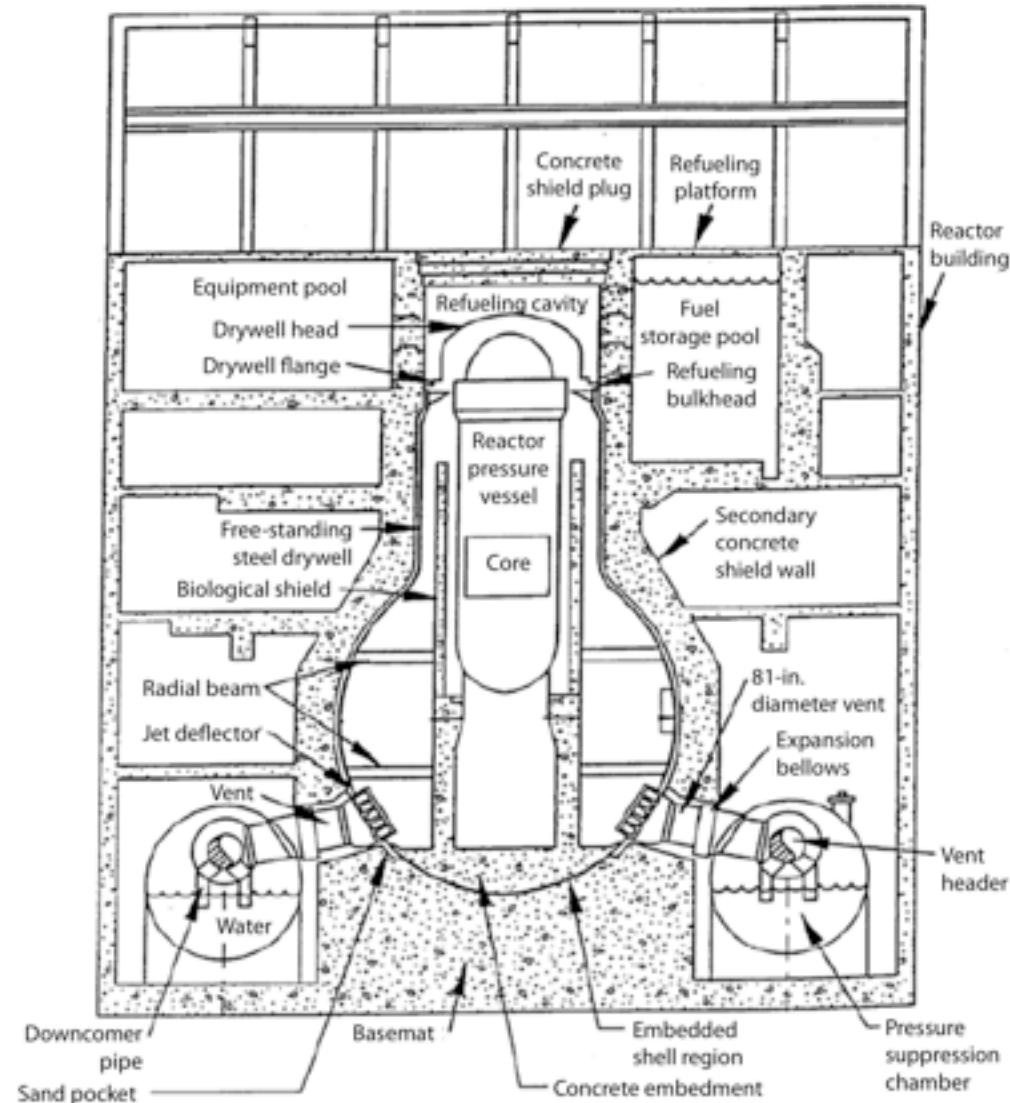


## Normal Operation

## Decay Heat Cooling



# Mark 1 General Electric, GE BWR Containment



# Mark 1 type (light bulb torus) containment structure

