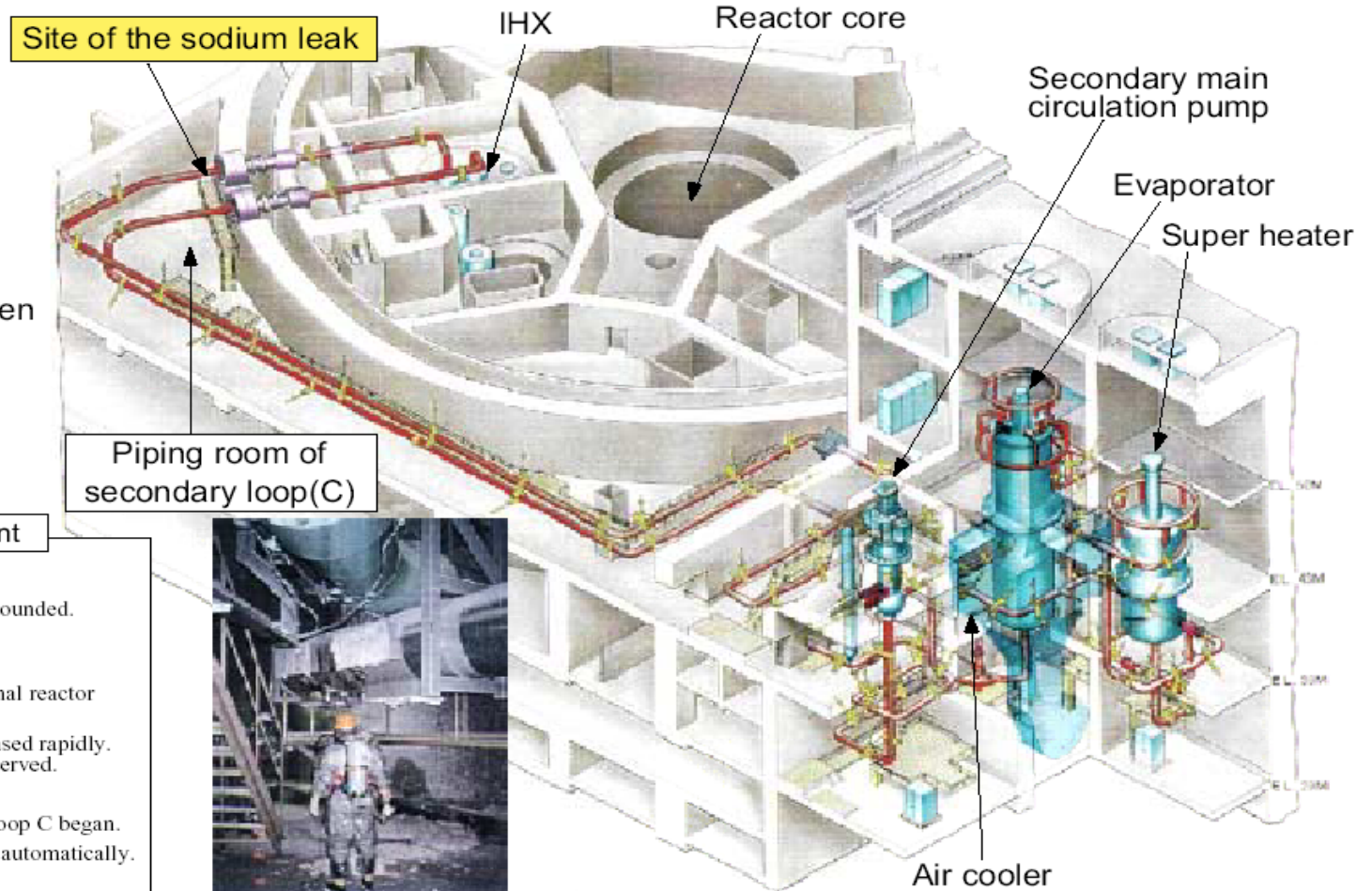


# Summary of the Sodium Leak Accident in Monju



Condition around the broken temperature sensor



Piping room of secondary loop(C)

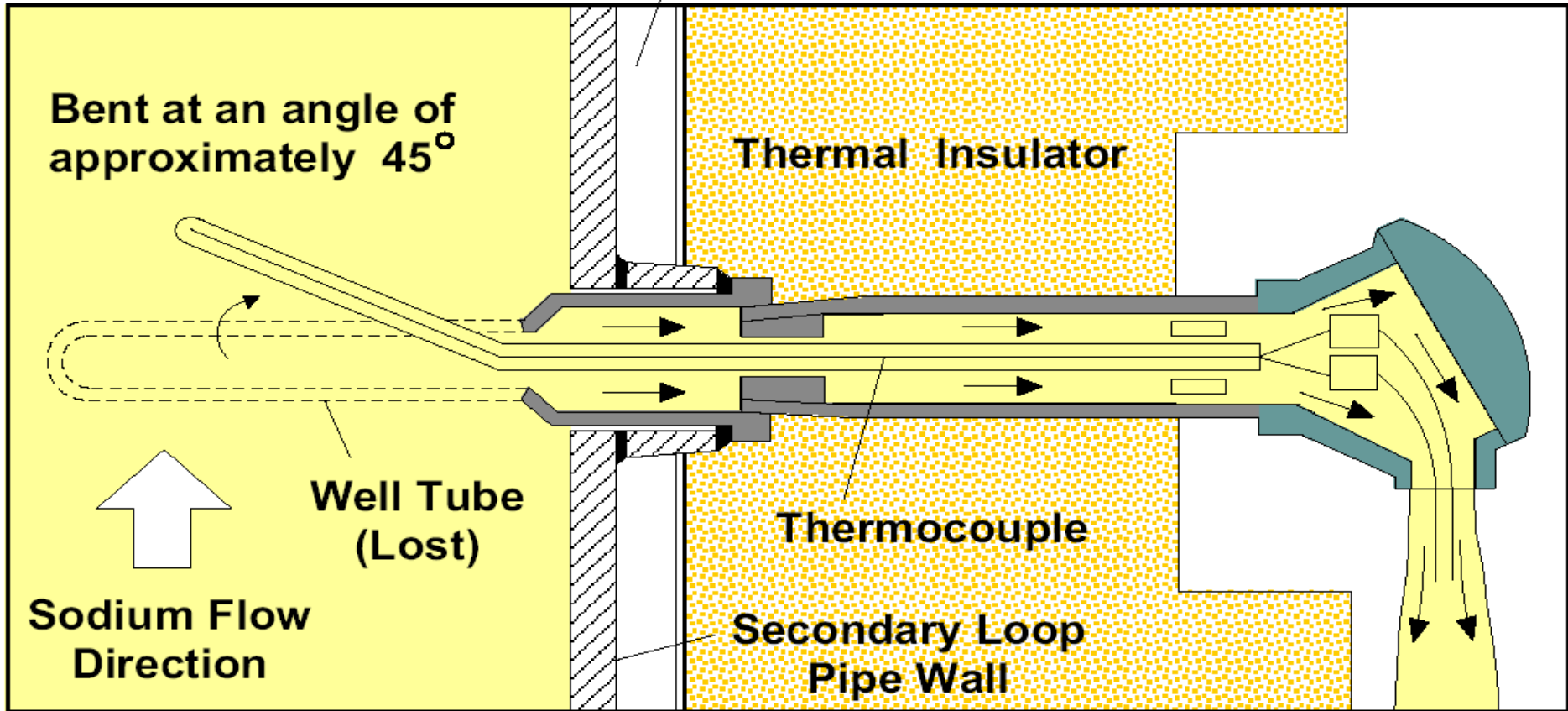
## Details of the accident

- 8 December 1995
- 19:47 Initiation of accident. Fire alarms sounded.
- 19:48 Sodium leak detector sounded. Smoke at leak site was confirmed.
- 20:00 Judged as small-scale leakage, normal reactor shut-down began.
- 20:50 New soundings of fire alarm increased rapidly. An increase in white fume was observed.
- 21:20 Reactor was manually tripped.
- 22:55 Sodium drain from the piping of Loop C began.
- 23:13 Ventilator in the SG room stopped automatically.
- December 9, 1995
- 00:15 Sodium drain finished.

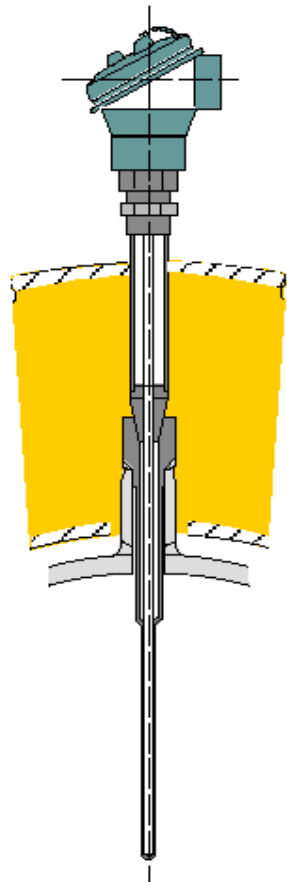


Conditions at the Leak Site

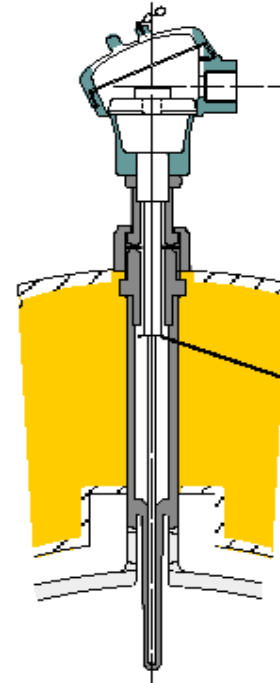
## Gap for monitoring the Sodium Leakage



The Sodium Leakage Flow Path



**EXISTING  
THERMOCOUPLE  
WELL**



**CLD  
(CONTACT-  
TYPE LEAK  
DETECTOR)**

**New-Type**

## **Modification of the Thermocouple Wells on the Secondary Circuit**

**Prevention of Sodium Leakage**

# Activities after the sodium leak accident

## Monju, safety? - Comprehensive review



Safety review by government  
Safety review by Fukui Prefecture

## Monju, necessary for Japan? - Reconfirmation



FBR-cycle technology was recognized as a "Science and Technology of National Importance" by the Council for Science and Technology Policy and the Cabinet (2005).  
→ Monju: High budget priority (rank: S)

## Trust on JAEA? - Campaign for public acceptance



Restart of Monju? Over half prefecture inhabitants in favor  
– Local newspaper research

## Prospect for FBR cycle development?



Feasibility study on commercialized FBR cycle system  
Joyo MK-III

O-arai

Tokai

# Trials to improve local people's understandings

Talks with ca. 1.98million people towards restart of Monju



Visitors to JAEA facilities

1,809,302

(Monju, Fugen, MC square and PR pavilions)

Local participants to JAEA events  
44,249

(Int'l. & local Forums, Municipal and Sub-municipal Seminars, etc.)



7<sup>th</sup> Tsuruga Int'l. Energy Forum  
November 19–20, 2010



Home visit and talk about JAEA  
121,577

("Cycle Meeting", JAEA visits on cut cherries, councils, local mayor houses, etc.)



Learning from resident and local enterprise advisors

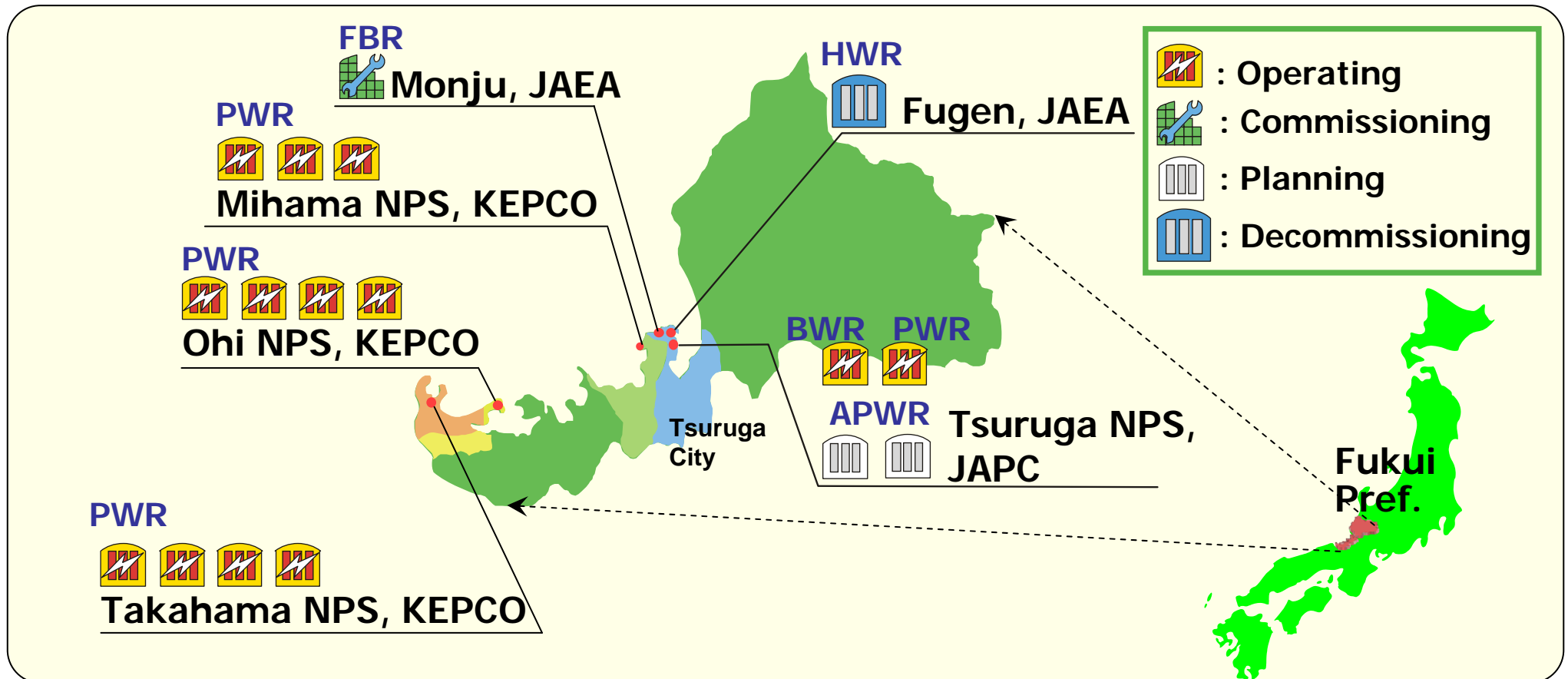
3,146

as of end March 2011

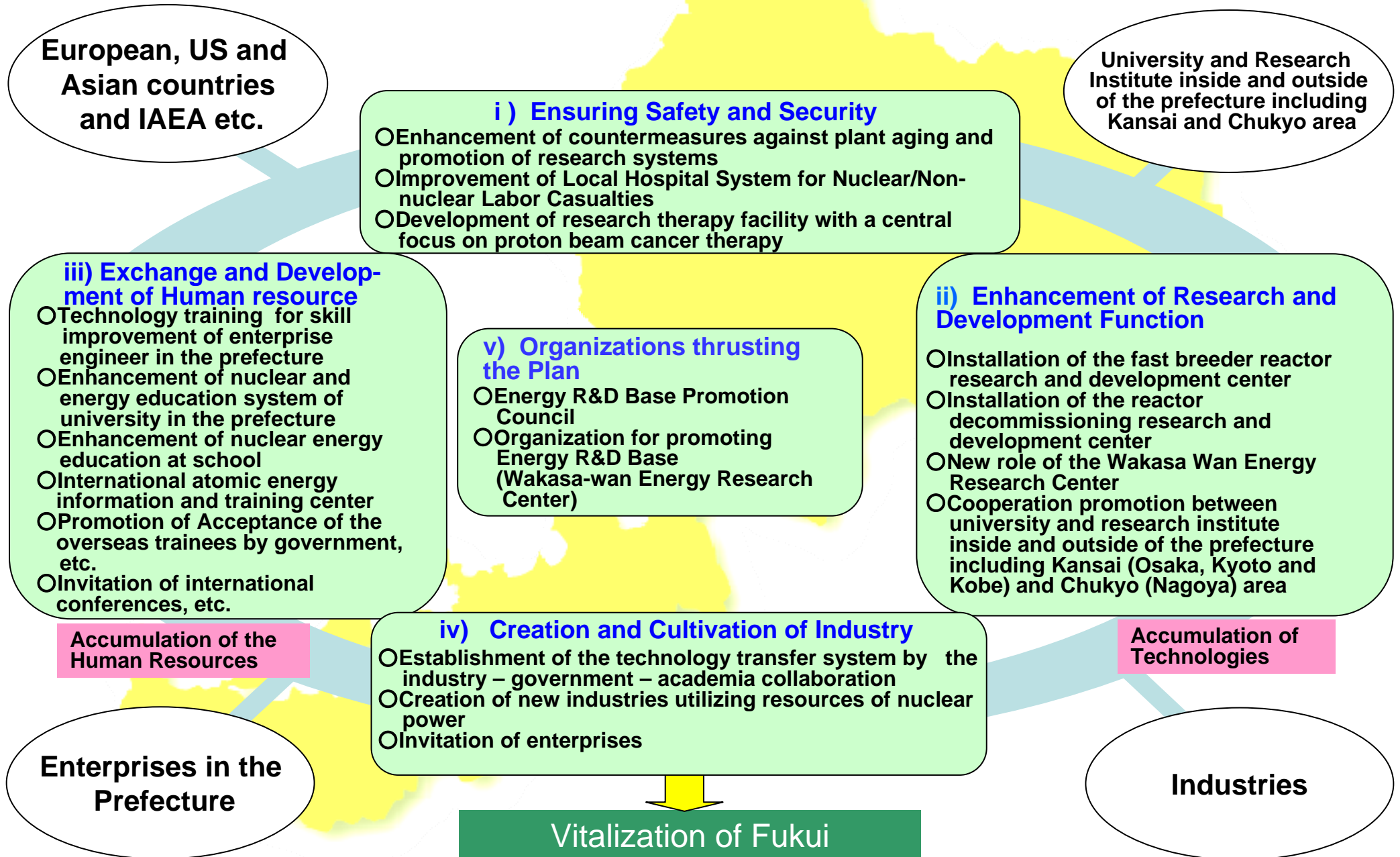
**Total ca. 1,977,038**

# Feature of the Fukui Prefecture

- Inhabitants: ca. 820,000 in the prefecture, ca. 70,000 in Tsuruga City
- 13 commercial NPPs and 2 proto-type reactors in Fukui
  - PWRs, BWR, HWR, and FBR
- The largest nuclear power production in Japan
  - 76.2TWh generated in JFY 2009
  - 27.4 % of domestic nuclear power production



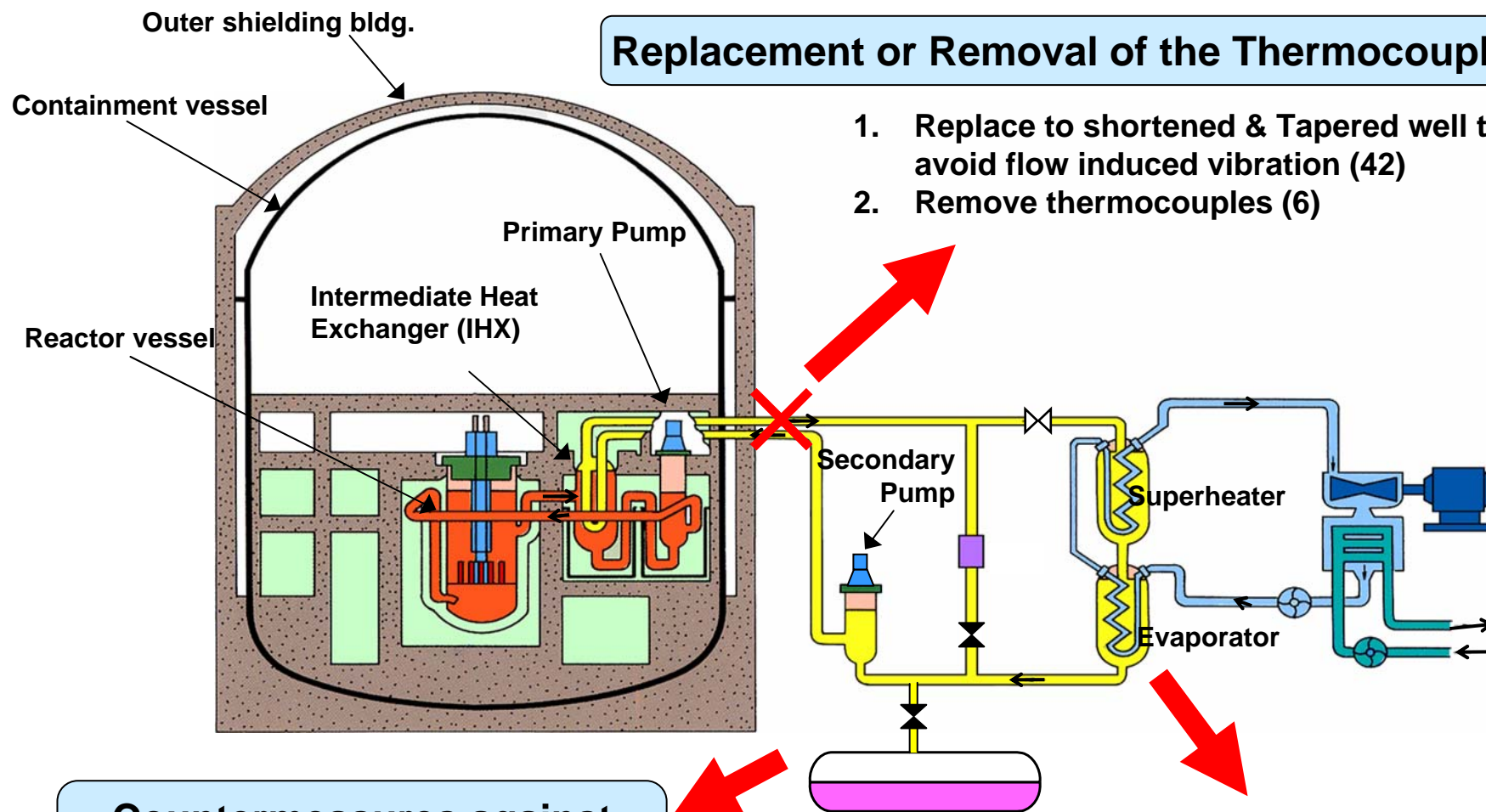
# Prefectural Energy R&D Centralization Project



# Modification Work (1/2)

## (2005 – 2007)

### Replacement or Removal of the Thermocouple Well



1. Replace to shortened & Tapered well to avoid flow induced vibration (42)
2. Remove thermocouples (6)

#### Countermeasures against Sodium Leakage

Early & reliable detection of Sodium Leak, enhance Sodium discharge system to stop the sodium leak immediately, etc

#### Improvement of SG Safety

Enhance water leak detection reliability and steam release system to stop Sodium-Water reaction immediately.

# Modification Work (2/2)

## (2005 – 2007)



Replacement of temperature sensor



Function Test for Sodium Fire Monitoring System



Installation of nitrogen tanks for Na fire extinguishing