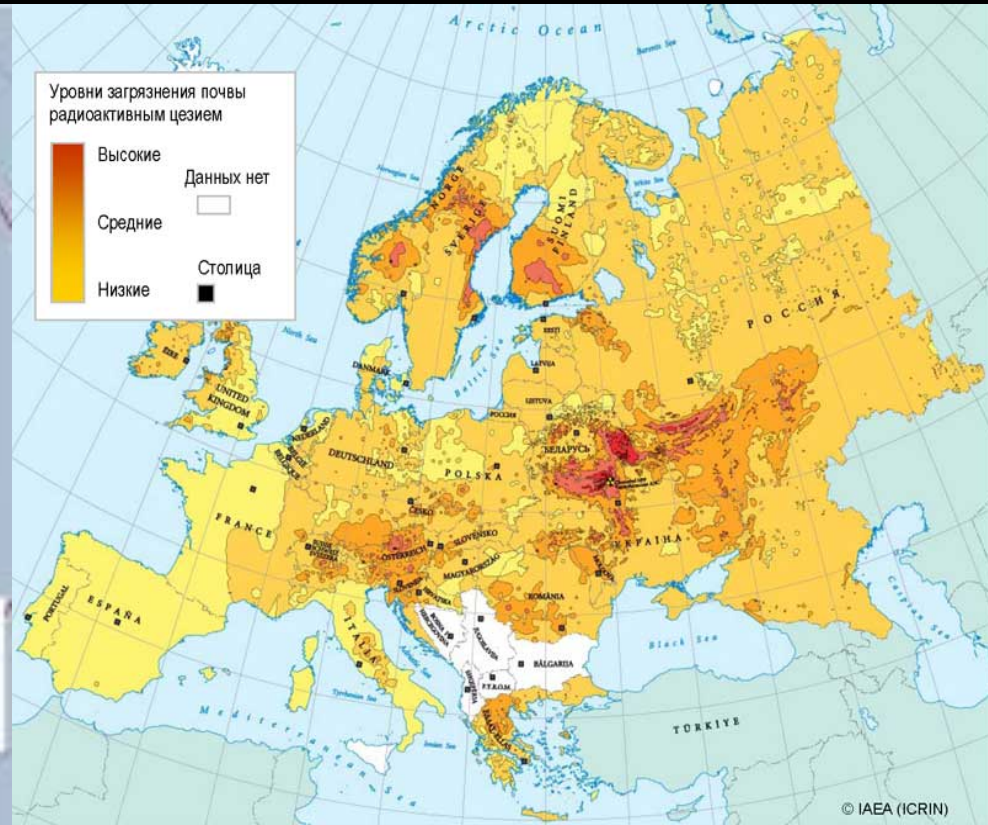


# Lessons for U.S. Emergency Planning from Chernobyl and Fukushima

## <sup>131</sup>Iodine



**Paul Gunter, Reactor Oversight Project  
Beyond Nuclear**

# **Radioactive iodine from nuclear accidents & sabotage**

- **$^{131}$  iodine radioactive half-life of 8 days**
- **Can be filtered out of containment venting at reactors to reduce uncontrolled radioactive releases to the environment**
- **Effective prophylactic protection of the thyroid gland is available to civil society with potassium iodide (KI)**

*Report Of  
The President's Commission On*

# THE ACCIDENT AT THREE MILE ISLAND



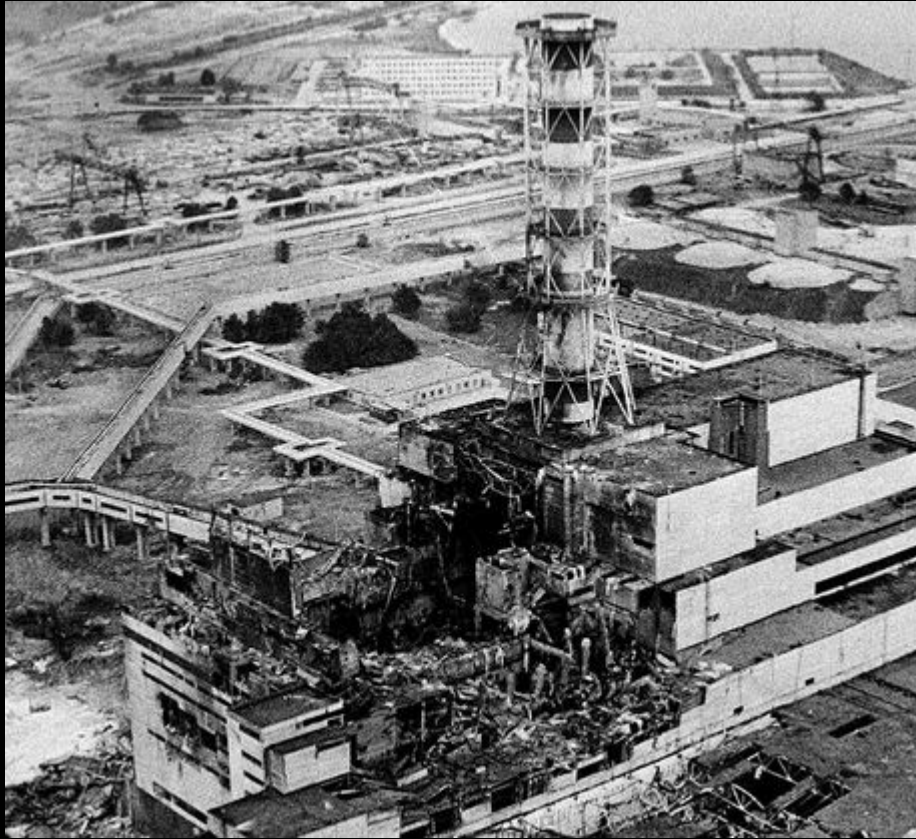
*The Need For Change:  
The Legacy Of TMI*

**The lesson was  
learned  
in 1979 at  
Three Mile Island**



# The lesson relearned

## April 26, 1986 and September 11, 2001



# **The lesson relearned March 11, 2011 at Fukushima**

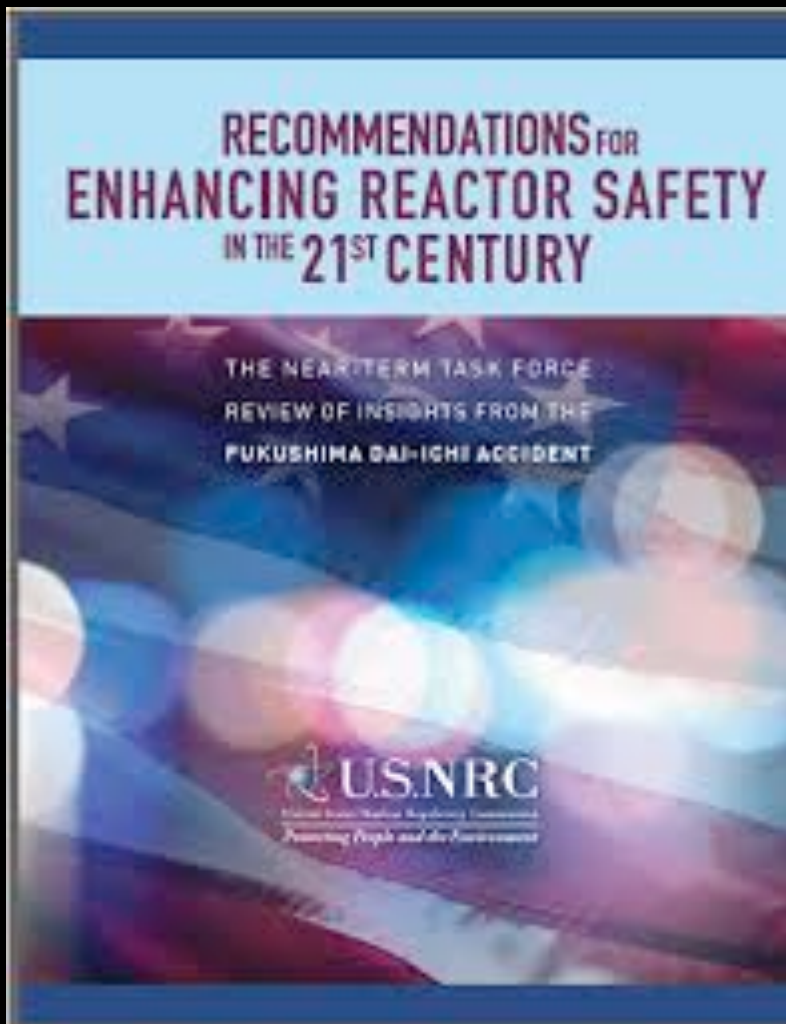


**Widespread  
population exposure  
to radioactive iodine  
and other radioactive  
isotopes**

**100% containment  
failure rate for GE Mark  
I boiling water reactor  
containment system**



# **A Lesson Unlearned for the United States: NRC failure to act on flawed containments to require filtered containment vents**



**NRC Japan Lessons Learned Task Force recommends Order for Filtered Containment Vents on 31 U.S. reactors**

**Industry opposes on grounds of cost**

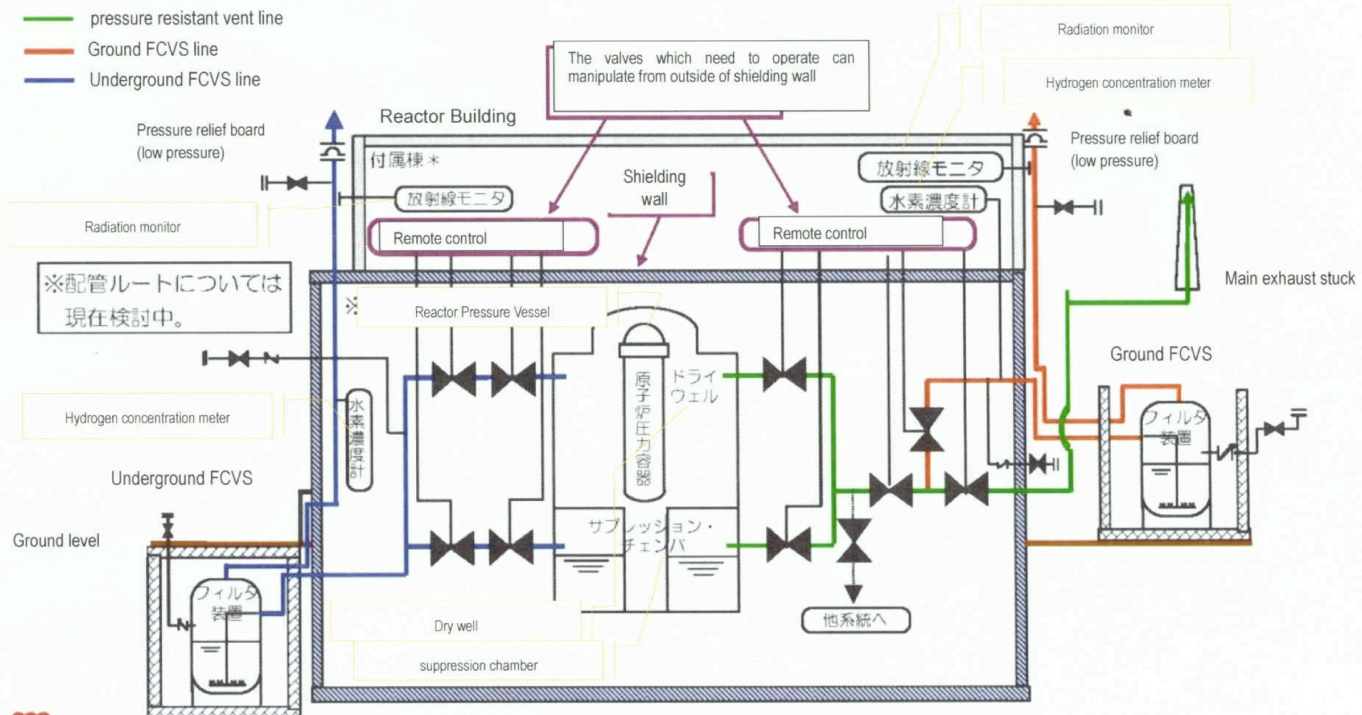
**Commission rejects requiring installation of radiation filters on containment vents**

# Japan requires Filtered Containment Vents

Overview of ground and underground filter vent equipment

## 地上式及び地下式フィルタVENT装置の概要について

- Ground FCVS lead vent line from pressure resistant vent line (underground FCVS leads directly from containment vessel), then decrease radioactive material then vent it from the roof of reactor building.
- The valves which need to operate can manipulate from outside of shielding wall during accident.
- Do not share the line with other equipment for sure to lead the gas to filter.



# **A Lesson Unlearned for the United States: NRC Failure to Act on Effective Prophylactic Protection with Potassium Iodide (KI)**



AMERICAN  
THYROID  
ASSOCIATION

FOUNDED 1923

**As recommended by ATA,**

**Pre-distribution by direct  
delivery to every resident  
within the radius of 50-miles  
of nuclear reactors**

**Stockpiling hospitals, police  
stations and fire  
departments within a radius  
of 200-miles of nuclear  
reactors**



# Nuclear “Regulatory Capture”

