“THE END” OF THE NUCLEAR POWER FAIRY TALE

THE ALLIANCE TO HALT FERMI 3

“KNOW NUKEs 101” OCTOBER 5, 2013

Presentation by PAUL GUNTER BEYOND NUCLEAR
PRESIDENT EISENHOWER’S

“ATOMS FOR PEACE”

GENERAL ASSEMBLY OF THE UNITED NATIONS
DECEMBER 8, 1953

INITIATION OF CRITICALITY
SHIPPINGPORT, PA
May 26, 1958
MAKING BOMBS WITH “THE PEACEFUL ATOM”

REACTOR SCIENCE AND TECHNOLOGY
OCTOBER 1952

PLUTONIUM WEAPONS AND POWER PRODUCTION REACTORS

DETROIT EDISON COMPANY & DOW CHEMICAL
“STUDY OF MATERIALS AND POWER PRODUCING REACTORS”
CHRONOLOGY OF A FAILED EXPERIMENT

FERMI 1
THE FIRST U.S. LIQUID METAL FAST BREEDER REACTOR
“WE ALMOST LOST DETROIT”  
BY JOHN FULLER
FERMI 2
THE GE MARK I
BOILING WATER REACTOR
THE GE MARK I CONTAINMENT SYSTEM: A DISPUTE OVER DESIGN SAFETY SEPTEMBER 1972
THE 1989 “FIX” TO AN UNRELIABLE CONTAINMENT SYSTEM
FIELD TESTING THE "FIX" FOR UNRELIABLE GE MARK I CONTAINMENTS
HOW DO YOU RESTORE CONTAINMENT AFTER DESTROYING IT?
GENERAL DESIGN CRITERIA [10 CFR 50 APPENDIX A]

“These General Design Criteria establish minimum requirements for the principal design criteria for water-cooled nuclear power plants similar in design and location to plants for which construction permits have been issued by the Commission.”

Criterion 16—Containment design.
Reactor containment and associated systems shall be provided to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as postulated accident conditions require.
FUKUSHIMA DAIICHI: LESSONS UNLEARNED

RECOMMENDATIONS FOR ENHANCING REACTOR SAFETY IN THE 21ST CENTURY

THE NEAR-TERM TASK FORCE REVIEW OF INSIGHTS FROM THE FUKUSHIMA DAI-ICHI ACCIDENT

U.S. NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment
HARDENED FILTER VENTS ON GE MARK I AND MARK II:

JAPAN INSTALLING & U.S. STALLING

**フィルタ付ボンネット設備の概要**

**2号機イメージ図**

1. **フィルタ付ボンネット設備本体の概略寸法・設置数**
   - 設置寸法: 直径約2m、高さ約8m（円筒形）
   - 設置数: 4基（2号機）、5基（3号機）

2. **フィルタ付ボンネット設備格納室の概略寸法**
   - 幅約13m×長さ約25m×高さ約12m (2号機)
   - 幅約13m×長さ約28m×高さ約14m (3号機)

**添付資料**

- 蒸気の流れ
- Steam flow

- Stack
- 排気筒

- Containment Building
- 原子炉建物

- Containment Vessel
- 原子炉格納容器

- Vent from upper side of containment building
- 原子炉建物上部から排気

- vent pipe
- 排気配管

- ground/bedrock
- 岩盤
GENERAL DESIGN CRITERIA [10 CFR 50 APPENDIX A]

Criterion 50—Containment design basis. The reactor containment structure, including access openings, penetrations, and the containment heat removal system shall be designed so that the containment structure and its internal compartments can accommodate, without exceeding the design leakage rate and with sufficient margin, the calculated pressure and temperature conditions resulting from any loss-of-coolant accident.
GENERAL DESIGN CRITERIA: “Accommodate” who?
“Ultimately, we have to change the mindset about people believing that accidents can’t happen. Before the accident, too many people believed in that mindset.”

Gregory Jazcko
Former NRC Chairman
GE HITACHI
ECONOMIC
SIMPLIFIED
BOILING
WATER
REACTOR
(ESBWR)
“It just isn’t economic, and it’s not economic within a foreseeable time frame,”
John Rowe, former CEO, Exelon Nuclear
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