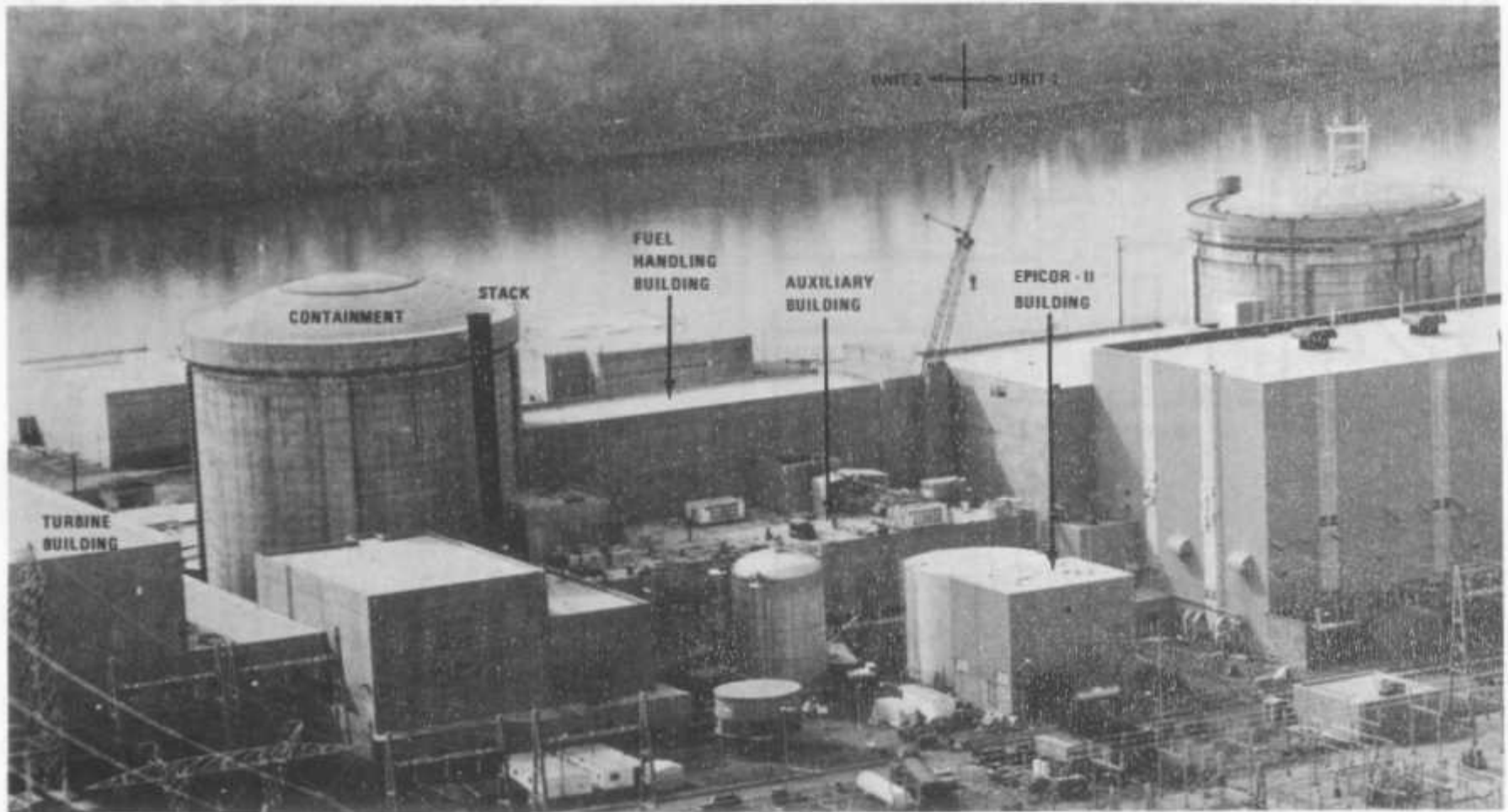


# LESSONS LEARNED FROM TMI AND HOW IT CHANGED THE US REGULATORY FRAMEWORK

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# THREE MILE ISLAND

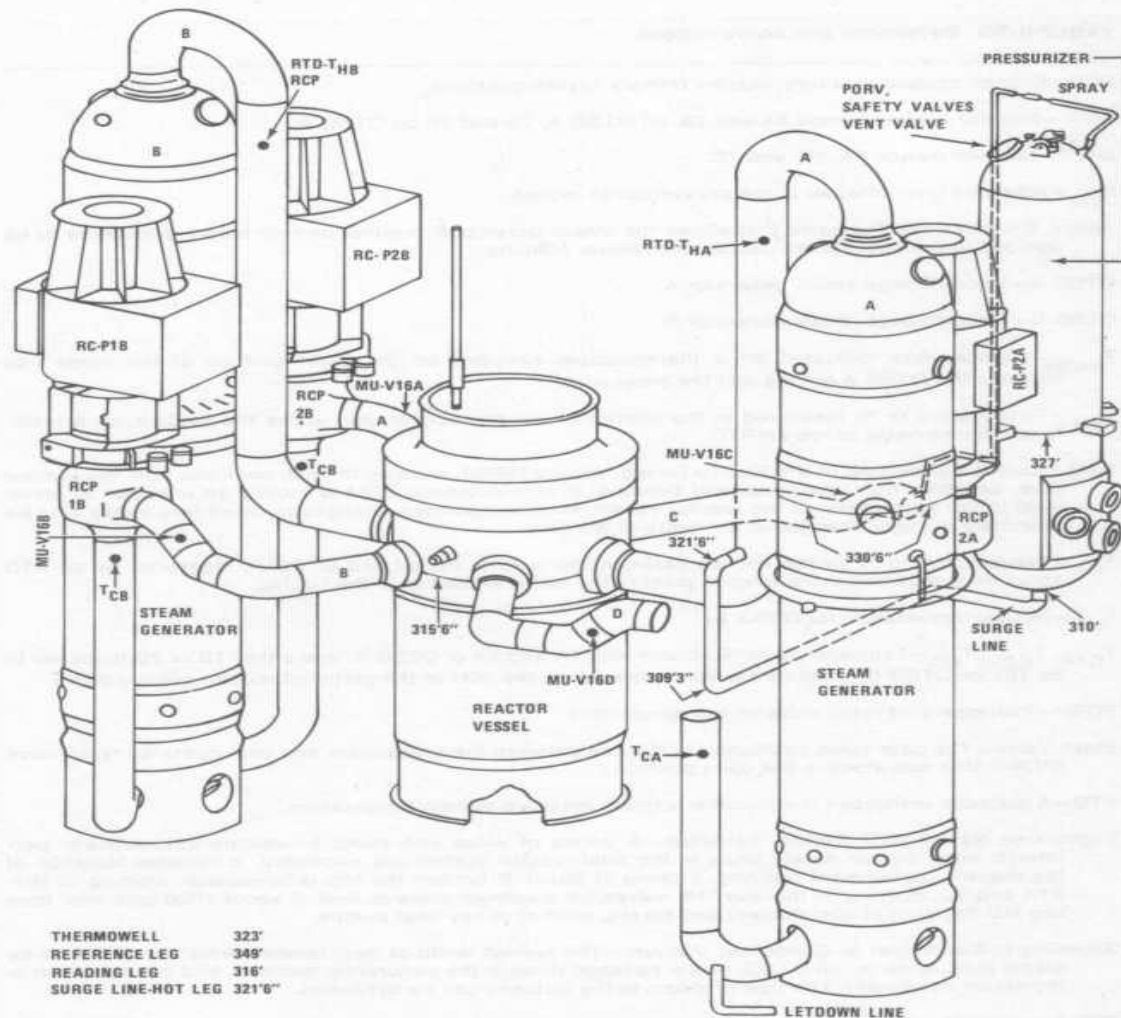


# ACCIDENT INVESTIGATIONS

- Presidential Commission on the Accident at Three Mile Island (Kemeny Report Oct. 1979)
- Report of the NRC Special Inquiry Group (Rogovin Report, Jan. 1980)
- U. S. Nuclear Regulatory Commission Investigation into TMI (NUREG-0600, 1979).



# TMI Reactor Cooling System



# Occupational Doses

- Three Overexposures During Accident
  - Maximum: 4.2 rem (42 mSv)
- Extremity
  - Maximum 150 rem (1.5 Sv)
- Four Overexposures During Recovery



# NRC Action Plan

- TMI-2 Lessons Learned Task Force Status Report and Short-term Lessons Learned (NUREG-0578)
- NRC Action Plan Developed as a Result of the TMI-2 Accident (NUREG-0660)
- Clarification of TMI Action Plan Requirements (NUREG-0737)

# Action Plan Items

- Design Modifications,
- Enhancements to Emergency Preparedness, and
- Radiation Protection Program Improvements



# Direct Radiation Hazards

- 5 rem (50 mSv) dose criterion
- Complete Shielding Design Review
- Area Radiation Monitoring





# Airborne Radiation Hazards

- Criteria Proved More Difficult
- Additional Systems Leak Testing
- SCBA vs Air Purifying Respirators
- Portable Airborne Iodine Sampling



# Emergency Preparedness Enhancements

- Appendix E to 10 CFR 50
- NUREG-0654
- NUREG-0737, Supplement No.1



# Emergency Plan Features

- Identifies who is in charge
- Who authorizes exceeding dose limits
- Specifies on-site emergency staffing
- Pre- staging emergency equipment
- Accountability of all onsite personnel



# Radiation Protection Program Improvements

- Health Physics Appraisal Program
  - Problems similar to TMI
  - Radiation safety culture issue
  - RP Technician training and qualification



# NRC Actions

- Standards for staff qualifications
- Radiation Protection Manager direct access to the Plant Manager
- RP authority to stop work



# Training

- 10 CFR 50.120 required SAT
  - INPO Accredited training Programs
- 10 CFR 19.12 Radiation Worker Training



# Conclusion

The radiation protection program must to be established as a vital plant support function, integrated into normal operations of a facility, if it is going to be successful during a sever accident.



- Questions??