



# The Price-Anderson Act and the Three Mile Island Accident

OECD/NEA Workshop

*Nuclear Damages, Liability Issues, and  
Compensation Schemes*

# Overview

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- Overview of Nuclear Liability in U.S.
- Three Mile Island Accident
  - Timeline of Accident
  - Response
- Nuclear Liability for TMI Accident
  - Implications for Price-Anderson Coverage
  - Claims and Payments
- Lessons for Today



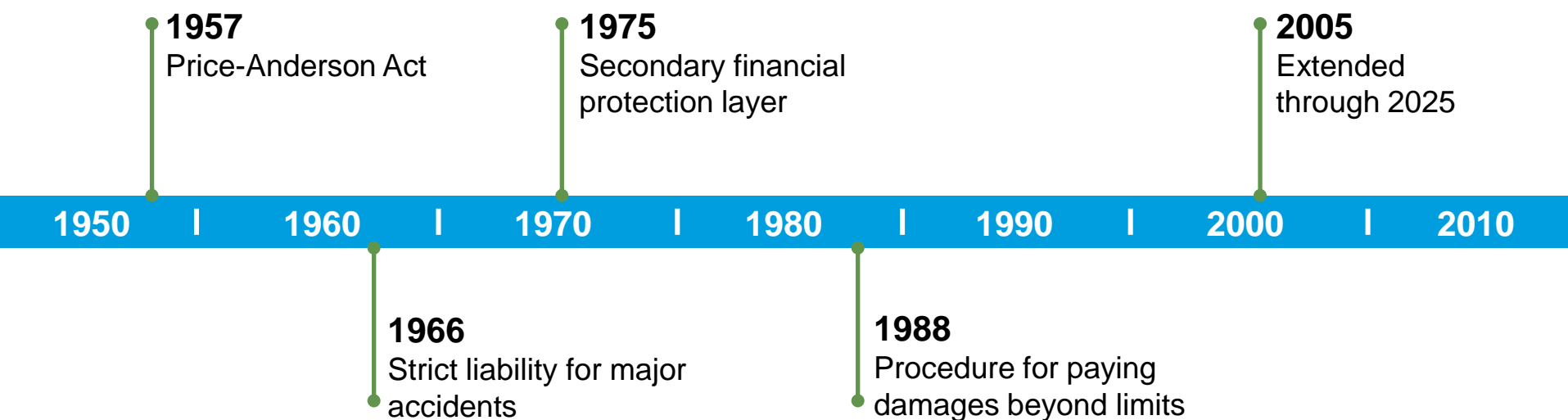
# Price-Anderson Act Overview

# Price-Anderson Act

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- Purposes:

- Encourage private development of nuclear power
- Establish legal framework for potential liability claims
- Provide ready source of funds to compensate victims



# Public Liability

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- “Public liability” is personal injury or property damage to persons or property located away from the reactor site (off-site) from a nuclear incident
- A nuclear incident is:
  - Any occurrence causing bodily injury, sickness, disease or death, or damage to property
  - Arising out of or resulting from the radioactive, toxic, explosive or other hazardous properties of
  - Source, special nuclear, or by-product material

# Omnibus Coverage

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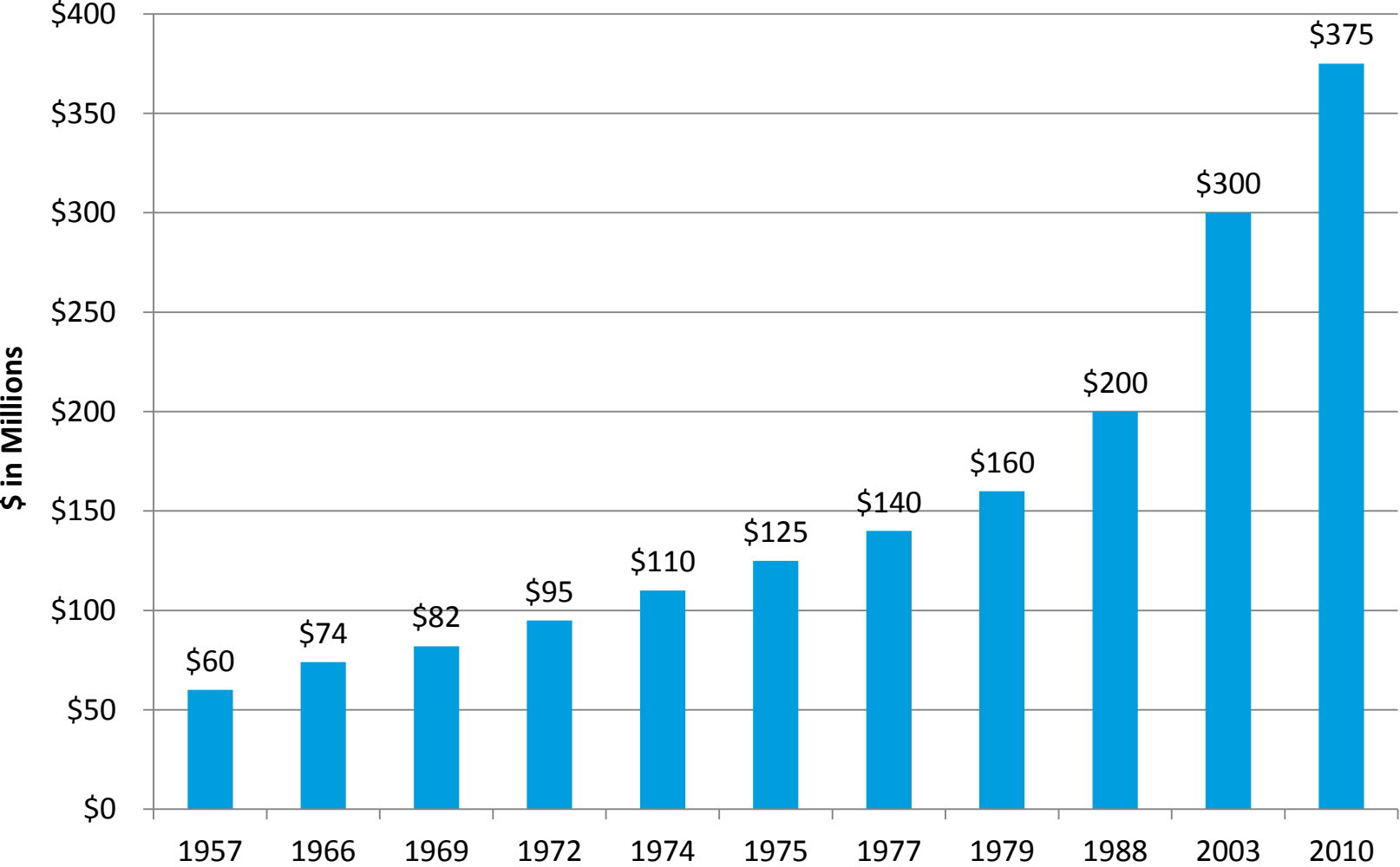
- Price-Anderson financial protection provides universal coverage
  - Define “insured” as “anyone who may be liable”
  - To be liable is to be insured
- Coverage protects:
  - Licensees
  - Contractors, vendors and suppliers
  - Lessors or other investors in a nuclear reactor
- Exclusive remedy
  - Economic channeling to required insurance policies

# Primary Financial Protection

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- Each operator of large nuclear power plant (>100 MW) must maintain primary financial protection
  - Applies to public (off-site) liability claims
  - Coverage = maximum liability insurance available at reasonable cost and on reasonable terms from private sources
- Purchase insurance from a pool of stock companies:
  - American Nuclear Insurers (ANI)
  - “Facility Form” for nuclear energy liability policy provides evidence of coverage

# Primary Financial Protection Policy Limits





# Secondary Nuclear Liability Insurance

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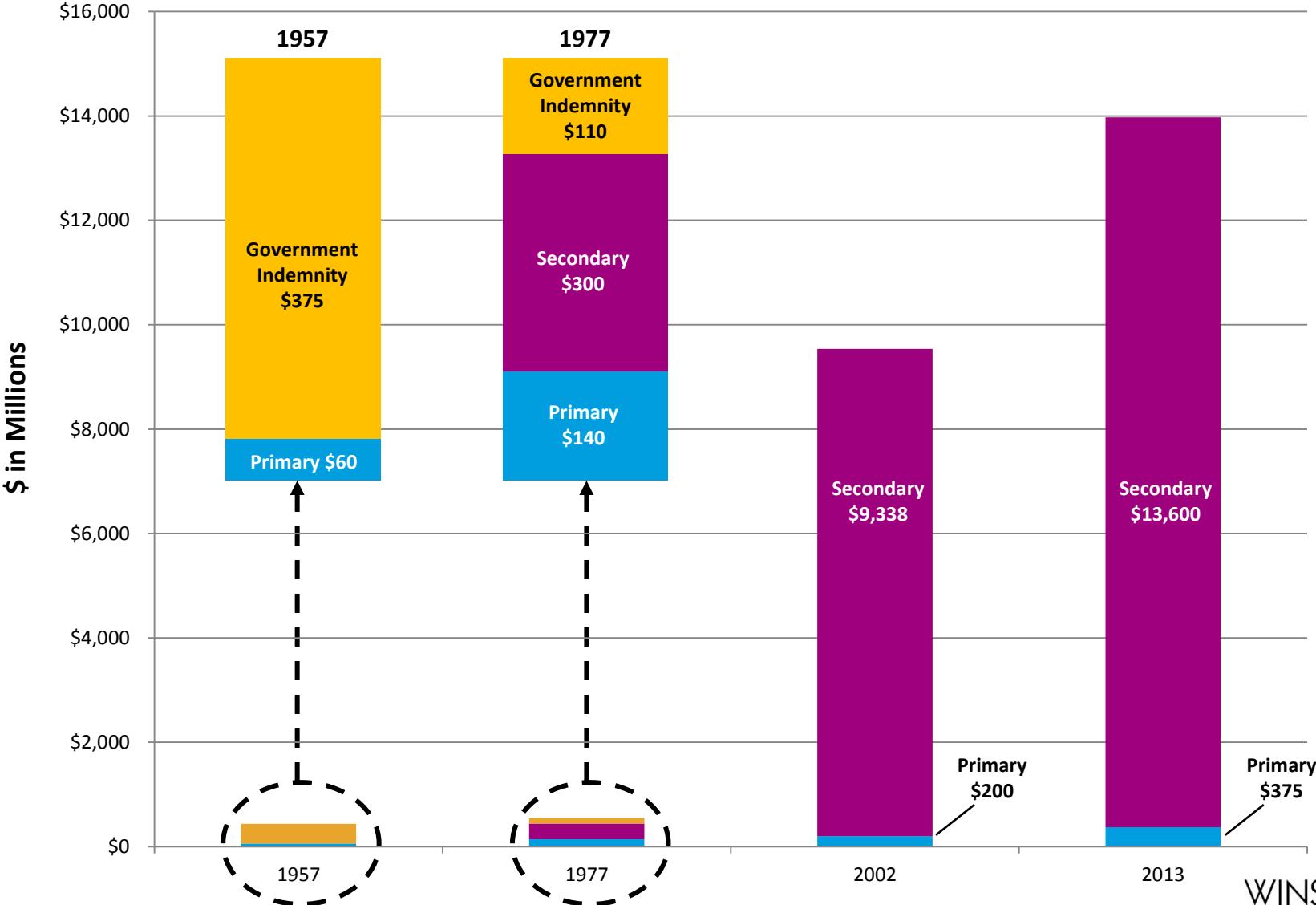
- Every reactor operator must participate in a secondary (excess) insurance plan
  - If primary insurance exceeded, all nuclear operators required to pay deferred (“retrospective”) premium
    - Maximum deferred premium and limits annual deferred premiums (for each unit, per incident)
    - Subject to a 5% surcharge if funds to pay claims and litigation costs are insufficient
- Significant funds available from pool of all reactor operators
  - Total amount available linked to number of operating reactors

# Liability Limit

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- Aggregate public liability for single nuclear accident
  - Primary + secondary financial protection
  - \$375 million + \$121 million x 104 reactors = ~\$13 billion
- If sufficient funds not available:
  - President must submit report and proposals for compensation to U.S. Congress.
  - Congress authorized to provide full and prompt compensation
- Stafford Disaster Relief and Emergency Assistance Act

# Liability Limits



# Summary of Coverage

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## Primary and Secondary Insurance

- Public Liability
- Excludes “Acts of War” but covers terrorism
- Includes offsite environmental for ENO or transport accident

## Required Property Insurance

- Losses to nuclear facility, including land, buildings, equipment
- On-site environmental clean-up

## Other Policies

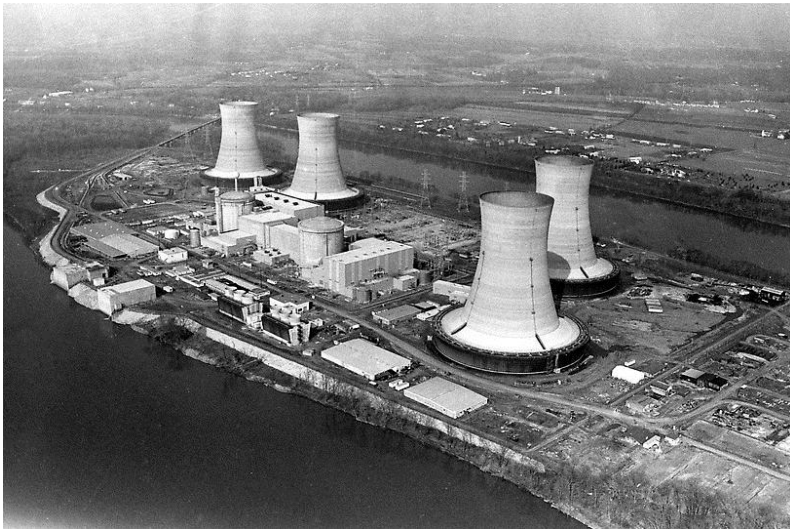
- Accidental Outage
- Master Workers Policy
- Suppliers’ and Transporters’ Policy
- Offsite environmental cleanup (non-ENO)



# Three Mile Island Accident

# Three Mile Island

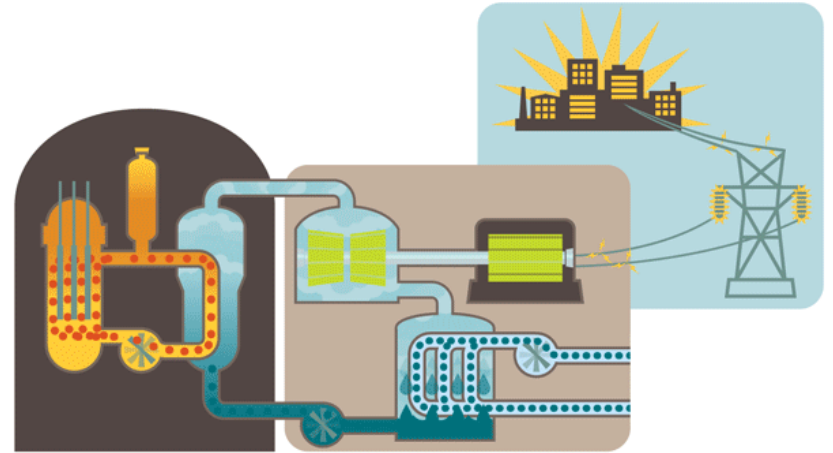
- Two-unit PWR station:
  - TMI-1: 800 MWe (1974)
  - TMI-2: 906 MWe (1978)
- Located near Harrisburg, Pennsylvania



# Accident - March 28, 1979

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- Accident begins at 4 am
  - Plant trips when cooling water pump stops functioning
  - Unknown to operators, valves for backup pumps have been closed
  - Pressure relief valve in the reactor opens as designed, but later fails to close
  - Cooling water released and eventually the core is uncovered



# Accident - March 29-April 1, 1979

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- Core damage worse than initial indications:
  - Hydrogen gas buildup in containment
  - Minor radiation release from auxiliary building to relieve pressure on the primary system



# Accident - March 29-April 1, 1979

- Governor of Pennsylvania:
  - First, directs people within 10 miles to stay inside
  - Then, advises pregnant women and preschool children within five miles of TMI to evacuate
  - Nearly 200,000 residents evacuate
- “Threat of catastrophe” over on April 4
- Order lifted on April 9

## Most Gas Stations Are Okay Until April

By STEVE KURTZ  
After an initial ban that prohibited the sale of gasoline at all gas stations in the state, the Pennsylvania Department of Environmental Protection has announced that it will allow the sale of gasoline at all gas stations in the state, except for those in the immediate vicinity of the Three Mile Island nuclear power plant.

The department's decision is based on a report by a team of scientists that found that the radiation levels in the air around the plant are not high enough to warrant a ban on the sale of gasoline. The report also found that the radiation levels in the soil and water are not high enough to warrant a ban on the sale of gasoline.

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## Overdose Fatal To Youth 17 Escapes Defeat

By STEVE KURTZ  
A 17-year-old youth who overdosed on drugs and died in a hospital last week has been declared a martyr by his friends and family. They are fighting to have his name removed from the state's list of drug addicts.

The youth, whose name is being withheld for privacy, died in a hospital last week after a prolonged illness. His family and friends believe that his death was caused by an overdose of drugs.

## Lebanon Daily News

107th Year - No. 171 LEBANON, PA., WEDNESDAY EVENING, MARCH 29, 1979 © 1979

## Radiation Leaks; TMI Evacuated



## Radiation In Reactor At Danger Level

A spokesman for the Pennsylvania Dept. of Environmental Protection said today that radiation levels in the reactor at the Three Mile Island nuclear power plant are at a "danger level."

The spokesman said that the radiation levels in the reactor are higher than they have ever been before. He said that the radiation levels are so high that they could cause serious health problems if they were inhaled or ingested.

## The Patriot

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Lebanon, Pa., 17042-1000

## Mass Evacuation Stayed Despite 'Meltdown' Risk



## NRC Tells Of Hazard

Washington, D.C. (AP) - The Nuclear Regulatory Commission today said that a "meltdown" at the Three Mile Island nuclear power plant could be averted if the reactor is cooled down.

The NRC said that the reactor is currently at a "danger level" and that it could melt down if it is not cooled down. The NRC said that the reactor is currently at a "danger level" and that it could melt down if it is not cooled down.

## Decision in Day or Two, NRC Man Says

Washington, D.C. (AP) - A spokesman for the Nuclear Regulatory Commission today said that a decision on whether to shut down the Three Mile Island nuclear power plant will be made in the next day or two.

The spokesman said that the NRC is currently reviewing the situation at the plant and that a decision will be made as soon as possible. He said that the NRC is currently reviewing the situation at the plant and that a decision will be made as soon as possible.

## Reactor Cooling Course Pivotal

Washington, D.C. (AP) - The Nuclear Regulatory Commission today said that the success of the Three Mile Island nuclear power plant will depend on whether the reactor can be cooled down.

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## Reactor Will Be Dismantled

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## Three Mile Island

By STEVE KURTZ  
The Three Mile Island nuclear power plant is a source of concern for many people in the area. The plant has been the subject of many rumors and speculations, and many people are worried about the safety of the plant.

The plant is located in the town of Middletown, Pa., and it is one of the largest nuclear power plants in the world. It has a capacity to produce 2,800 megawatts of electricity.

## Radiation In Atmosphere

By STEVE KURTZ  
Radiation levels in the atmosphere around the Three Mile Island nuclear power plant are higher than they have ever been before. The radiation levels are so high that they could cause serious health problems if they were inhaled or ingested.

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## Assistance Mothers

By STEVE KURTZ  
The Pennsylvania Dept. of Environmental Protection is providing assistance to the mothers of children who live within five miles of the Three Mile Island nuclear power plant.

The department is providing assistance to the mothers of children who live within five miles of the plant. The assistance includes providing information about the plant and the radiation levels in the area.

## GAO: States Feeble On Radiation Crises

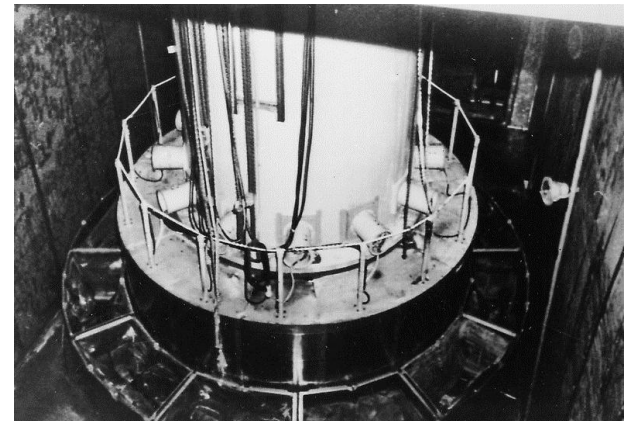
Washington, D.C. (AP) - The General Accounting Office today said that the states are doing a poor job of handling radiation crises.

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# The Aftermath

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- May 1979 – Reactor placed in “cold shutdown”
- July 1979 – Radioactive Krypton gas purged from the reactor building to prepare for cleanup crews
- October 1985 – Process of defueling reactor begins
- Late 1993 – TMI-2 placed in monitored storage





# Nuclear Liability and TMI

# Some Funds Available Quickly

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- Advanced money to evacuated families to cover living expenses
- Immediately paid pregnant women and pre-school age children who evacuated five-mile area
  - 3,000 claimants
  - \$1.4 million for living expenses and lost wages



# Immediate Litigation and Partial Settlement

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- Within weeks, class action filed for businesses and residents within 25 miles of the plant
  - >2,000 personal injury claims
  - Other claims: lost wages, evacuation costs, loss of property value, loss of profits
- September 1981 – partial settlement (not injury cases)
  - \$20 million for economic harm
  - \$5 million for the establishment of a Public Health Fund
- Examples:
  - Most businesses: two weeks of gross profits
  - But, for those nearest TMI, damages more complex and payments relied on expert appraisals

## Additional Payments

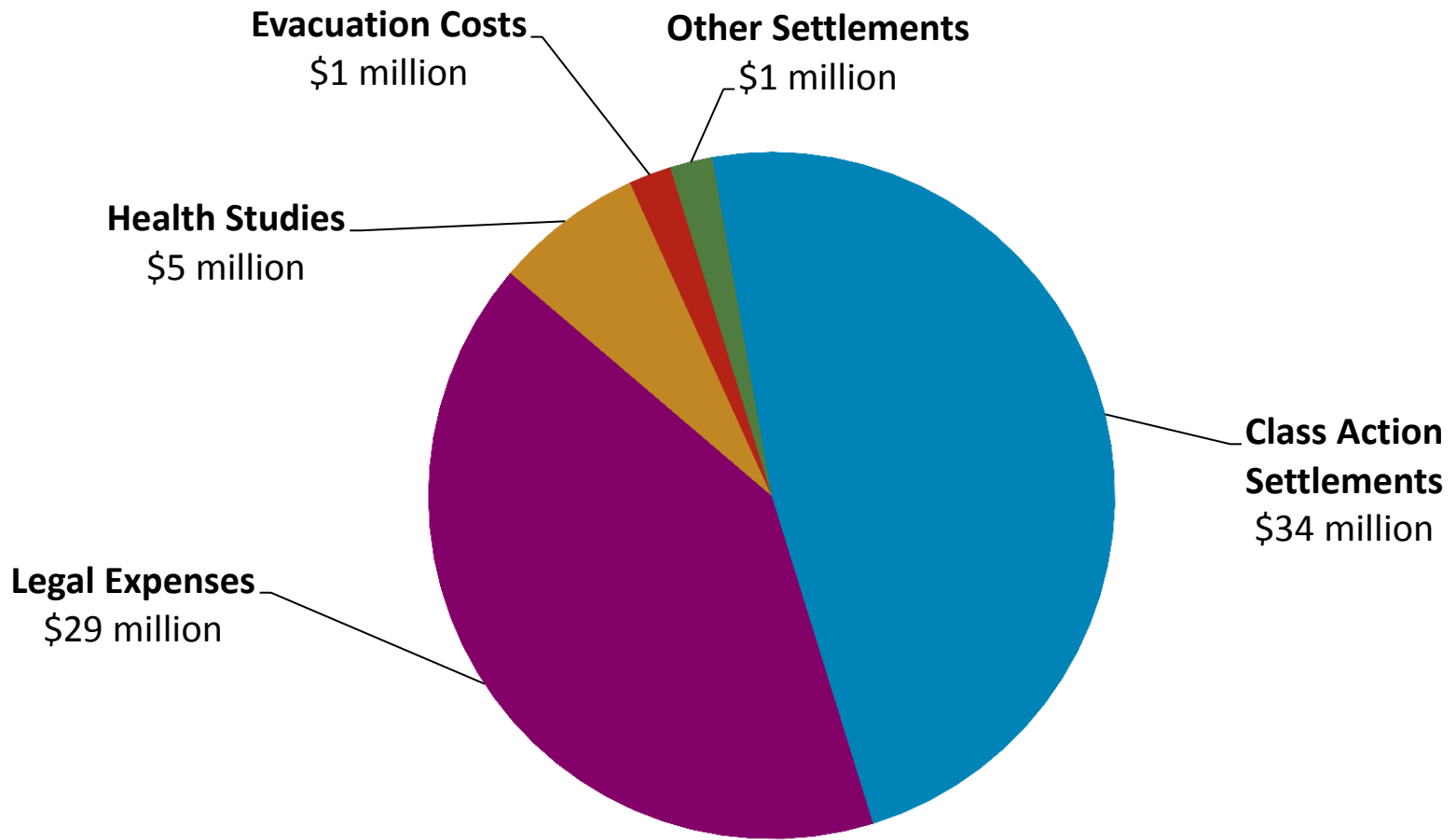
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- February 1983 – \$2.35 million in evacuation loss claims and wage loss claims to 10,993 claimants
- February 1984 – Payments to local governments:
  - \$250,000 payment to Pennsylvania
  - \$235,000 payment to municipalities within 25 miles
- In 1985, \$14.25 million to settle bodily injury and emotional distress claims for 280 people



# Total Payments for TMI Accident

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**Total Payout for TMI = \$71 million**

# TMI-2 “Clean-Up”

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- Total TMI-2 “clean up” cost was \$975 million
  - Ratepayers ~\$125 million
  - Property insurance \$300 million
  - Some research funding
  - Balance by shareholders
- TMI-1 restarted in 1985
  - Still operating
  - Licensed through 2034
- TMI-1 and TMI-2 will be decommissioned at same time







# TMI Lessons for Nuclear Liability

# Lessons from TMI for Nuclear Liability

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- Offsite releases were small; offsite damage very limited
- Emergency Preparedness
  - Participate in Emergency Planning exercises
  - Coordinated response and communications
- Liability scheme worked as intended
  - Legal framework functioned effectively
  - Ready source of funds available
  - Precedent can be applied in future



Questions?



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### Practice

Nuclear Energy  
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Energy Investigations

### Education

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Lewis and Clark, J.D.

### Bar Admissions

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Tyson Smith is a partner in the firm's Washington, DC and San Francisco offices who has concentrated his legal practice in the area of nuclear energy regulation since 2003.

Mr. Smith represents and provides advice to clients regarding compliance with the regulations of the U.S. Nuclear Regulatory Commission. He has been extensively involved in initial licensing of new nuclear facilities, including commercial power reactors and uranium enrichment facilities. He regularly assists clients throughout the nuclear fuel cycle in licensing, compliance, and enforcement matters.

Prior to joining the firm, Mr. Smith served as an attorney for the U.S. Nuclear Regulatory Commission.

Mr. Smith is a member of the American Bar Association and served as chair of the Special Committee on Nuclear Power in the ABA's Section of Environment, Energy, and Resources. Mr. Smith was ranked in Chambers USA 2013 as one of the nation's top lawyers in the nuclear energy regulatory and litigation practice.