ARC 486

Ethics:
An Architectural study

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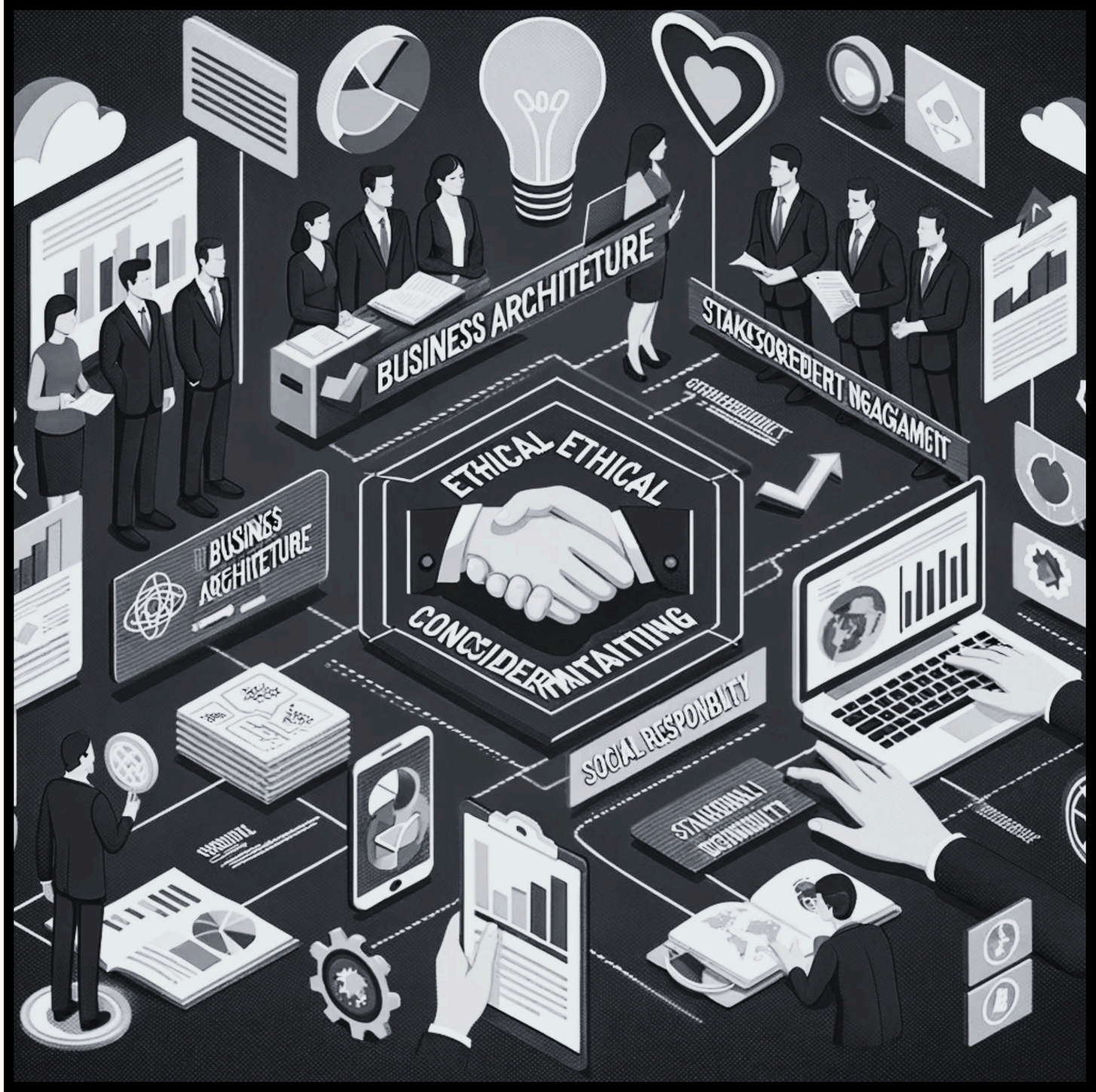


Part 1:
AIA Code of Ethics

Part 2:
Fukushima Daiichi Nuclear Disaster

Introduction

Part 1:
AIA Code of Ethics

- The AIA Code of Ethics is organized in three levels:
  - Canons (broad principles)
  - Ethical Standards (aspirational goals)
  - Rules of Conduct (mandatory)
- The Rules are enforceable; violations may lead to discipline.
- This presentation focuses only on the Rules (not the Canons or Ethical Standards).

AIA

Canon 1:

General Obligations (Rules)

- Rule 1.101: Demonstrate a consistent pattern of reasonable care and competence; apply technical knowledge and skill ordinarily applied by architects of good standing in the same locality
- Rule 1.401: Do not engage in harassment or discrimination in professional activities (race, religion, gender, disability, etc.)
- Rule 1.402: Do not engage in conduct involving wanton disregard of others' rights
- Rule 1.403: Do not knowingly design spaces intended for execution
- Rule 1.404: Do not knowingly design spaces intended for torture, including prolonged solitary confinement

Canon II:
Obligations to the Public

- Rule 2.101: Do not knowingly violate the law in professional practice.
- Rule 2.102: Do not offer or make payments or gifts to public officials to influence judgment.
- Rule 2.103: When serving in a public role, do not accept gifts or payments that could influence decisions.
- Rule 2.104: Do not engage in fraud or misrepresentation.
- Rule 2.105: If aware of client actions that violate the law or endanger the public, advise against, refuse consent, and report if unresolved.
- Rule 2.106: Do not assist or counsel clients in fraudulent or illegal acts.
- Rule 2.301: When making public statements on architectural issues, disclose any financial or personal interests.
- Rule 2.401: Inform clients about potential environmental impacts of their projects.

Canon III:
Obligations to the Client

- Rule 3.101: Follow all applicable laws and regulations; consult qualified experts when necessary.
- Rule 3.102: Accept only projects for which you or your firm are qualified.
- Rule 3.103: Do not alter project scope or objectives without client consent.
- Rule 3.201: Disclose conflicts of interest; obtain written client consent.
- Rule 3.202: Act impartially when interpreting contract documents.
- Rule 3.301: Do not mislead clients about outcomes, timelines, or costs.
- Rule 3.401: Protect client confidentiality unless disclosure is legally required.

Canon IV:
Obligations to the Profession

- Rule 4.101: Report serious ethical violations by other members to the National Ethics Council.
- Rule 4.102: Sign or seal only work over which you have responsible control.
- Rule 4.103: Do not make false or misleading professional statements.
- Rule 4.201: Be honest about qualifications and project roles; do not claim credit for others' work.
- Rule 4.202: Ensure those under your supervision act according to this Code.

Canon V:
Obligations to Colleagues

- Rule 5.101: Treat colleagues and employees with respect and fairness.
- Rule 5.201: Support interns and students in gaining professional experience and licensure.
- Rule 5.301: Acknowledge and respect the contributions of others in shared work.
- Rule 5.302: Do not remove firm materials or data without permission when leaving employment.
- Rule 5.303: Allow departing staff reasonable access to non-confidential materials they helped produce.

Canon VI:
Obligations to the Environment

- Rule 6.501: Consider environmental effects of design decisions and advise clients accordingly.
- Promote sustainable, energy-efficient, and resource-conscious design solutions.

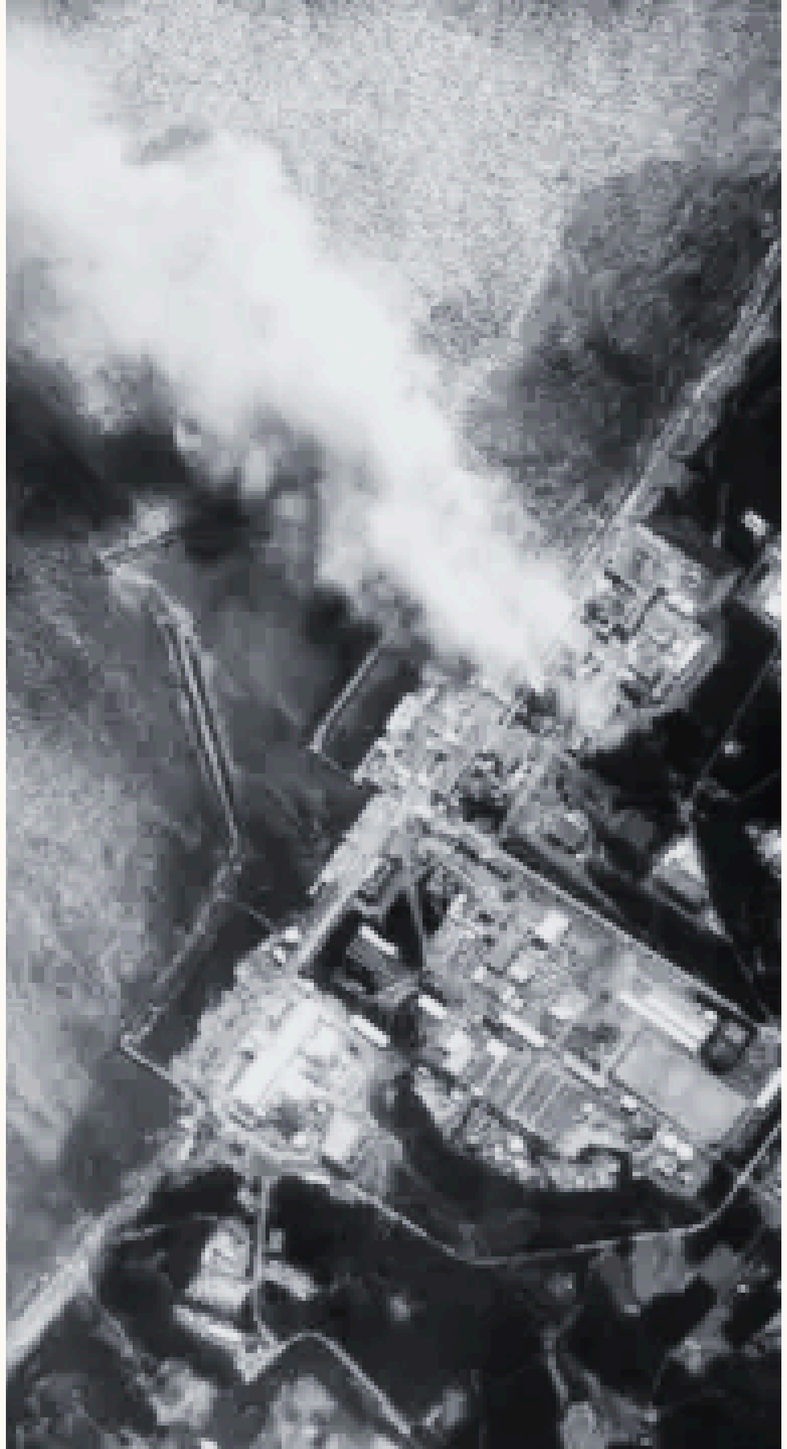
Enforcement, Application & Amendment of Rules

- The Code applies to all members of the AIA.
- Enforcement is managed by the National Ethics Council.
- Penalties include admonition, censure, suspension, or termination of membership.
- Serious crimes can result in automatic suspension or termination.
- The Code may be amended by AIA Board or by delegate vote at annual meetings.

Introduction

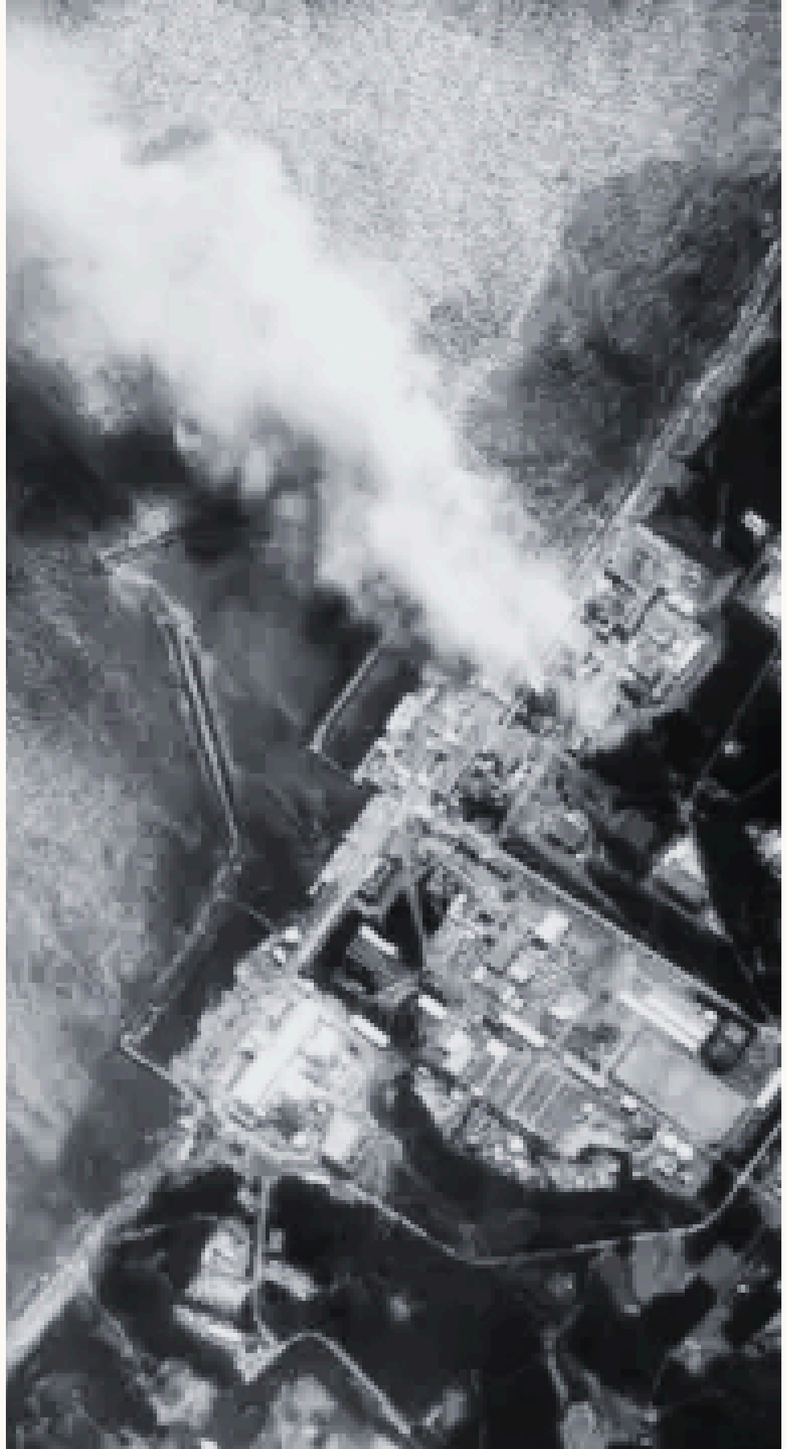
Part 2: Fukushima Daiichi Nuclear Disaster

To summarize the Fukushima Daiichi nuclear disaster from an ethical and engineering perspective, highlighting what went wrong, ethical violations, and lessons learned for the architecture, engineering, and construction (AEC) industry.



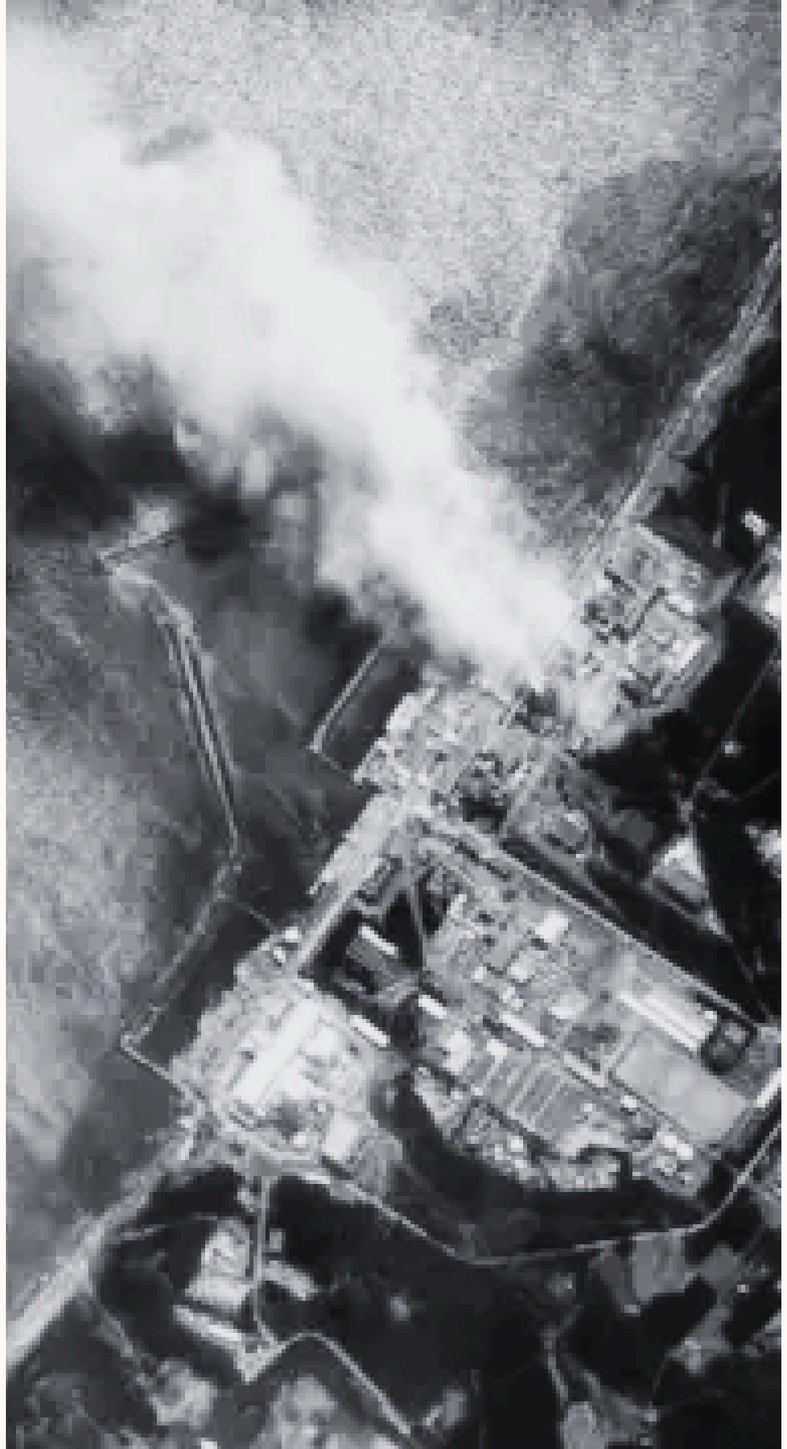
Background of the Case

- Location: Fukushima Prefecture, Japan.
- Facility: Fukushima Daiichi Nuclear Power Plant (six reactors operated by Tokyo Electric Power Company – TEPCO).
- Date of Incident: March 11, 2011.
- Trigger: A magnitude 9.0 earthquake and massive tsunami struck Japan’s east coast.
- Consequence: Cooling systems failed in multiple reactors, leading to core meltdowns, hydrogen explosions, and radioactive release.
- Classification: Level 7 nuclear event – same severity as Chernobyl (1986).



Overview of Events

1. Earthquake & Tsunami Impact – Destroyed power lines and backup generators.
2. Loss of Cooling Systems – Reactors 1, 2 & 3 overheated within hours.
3. Hydrogen Explosions – Damaged containment buildings and released radioactivity.
4. Mass Evacuation – 160,000 residents displaced within 20 km radius.
5. Government and TEPCO Response – Delayed communication and insufficient safety measures prolonged the crisis.

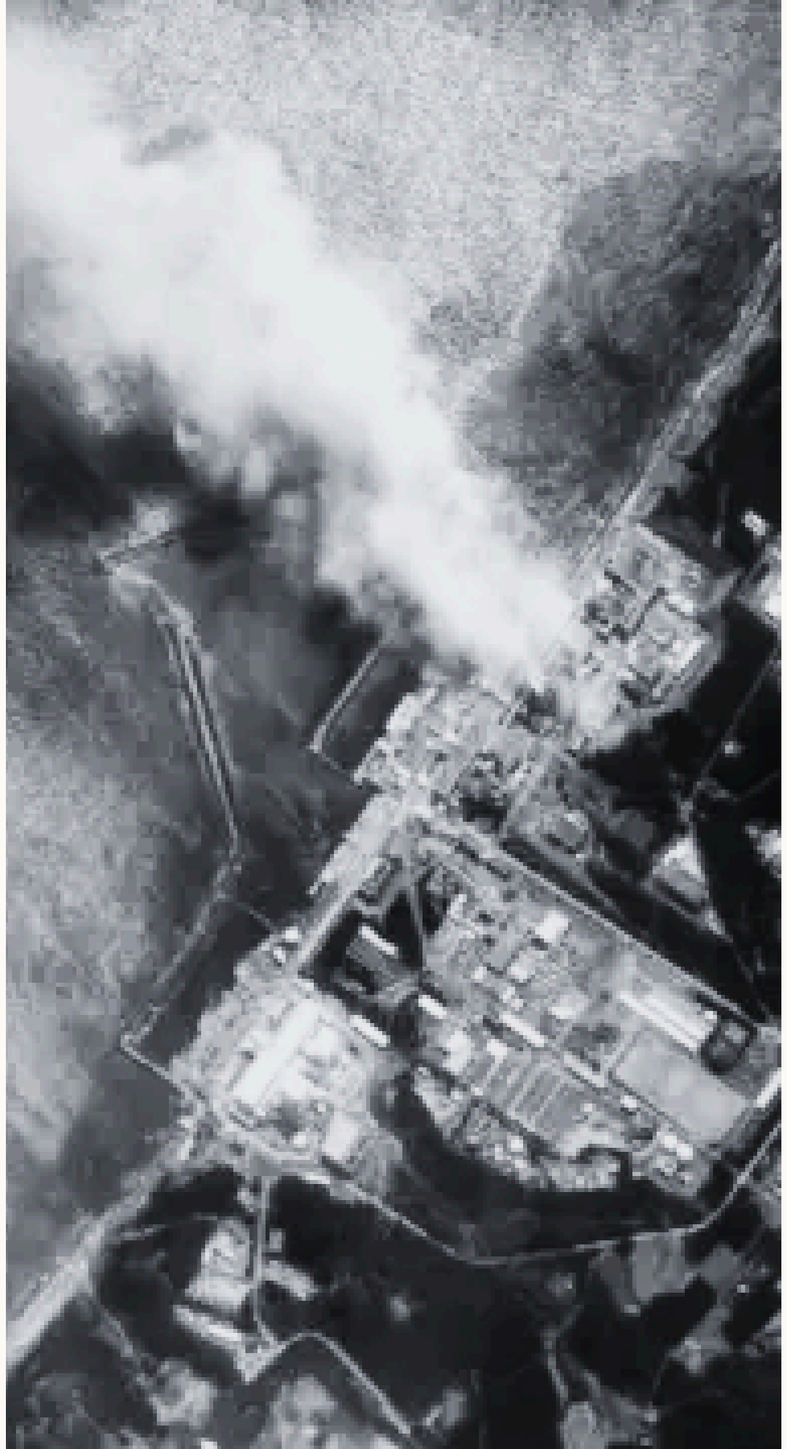


Ethical Context and AEC Relevance

- Involves ethical responsibilities of engineers, construction managers, and government regulators.
- Raises questions on:

1. Professional duty to protect public safety.
2. Negligence in risk assessment and disaster planning.
3. Corporate transparency and truthfulness to the public.

- Demonstrates how engineering decisions, siting, and construction oversight can have catastrophic ethical consequences.



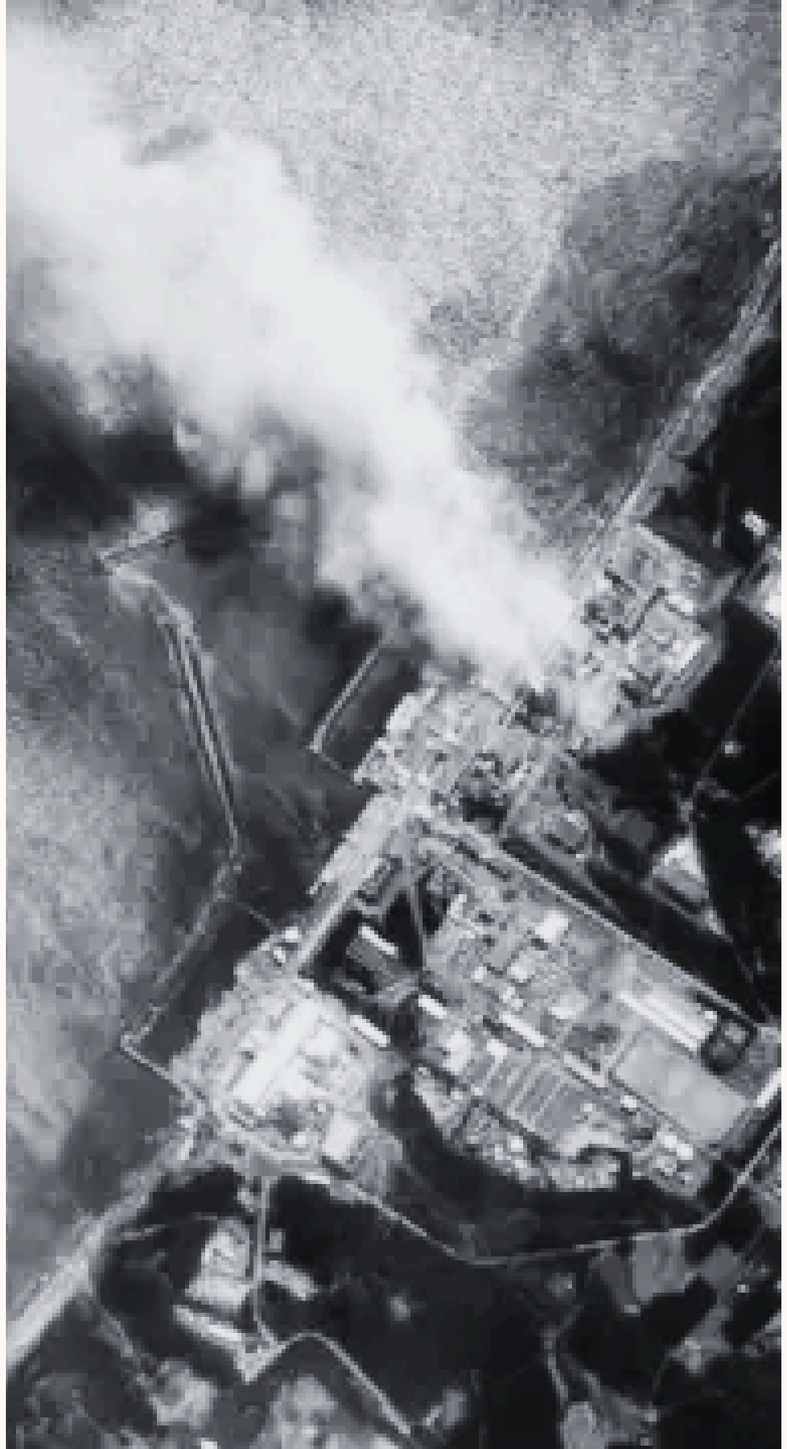
What Went Wrong (Findings)

Technical & Managerial Failures

- Plant located too close to coastline despite known tsunami risks.
- Seawall height (5.7 m) was inadequate for predicted waves (> 14 m).
- Backup diesel generators placed in basements – flooded and failed.
- Emergency venting systems poorly designed and hard to operate.
- Lack of independent safety oversight and regulatory enforcement.
- Inadequate disaster training for staff and first responders.

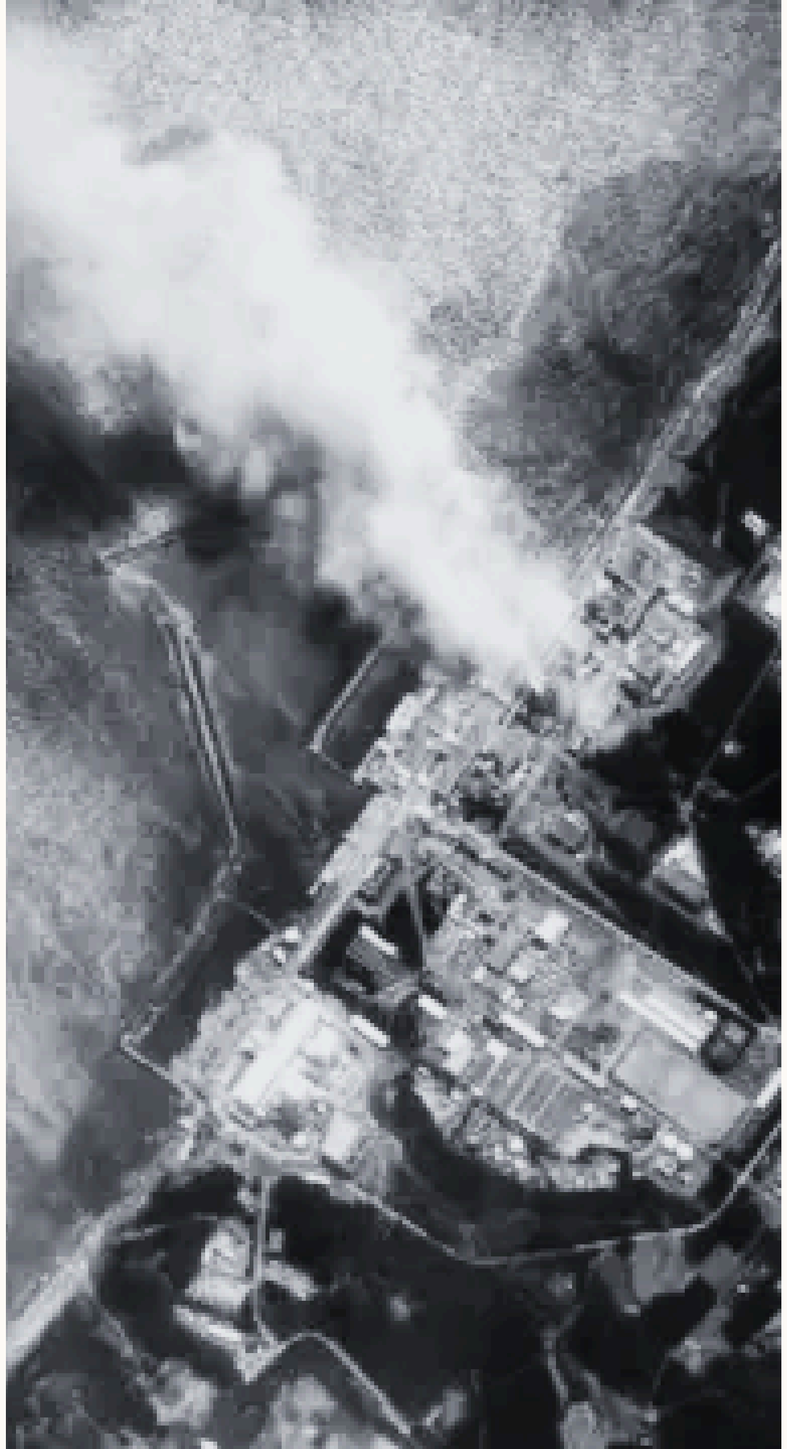
Ethical and Professional Failures

- TEPCO ignored prior risk studies warning of possible tsunami damage.
- Failure to disclose real risk levels to the public and government.
- Delayed evacuation orders – prioritized company image over safety.
- Lack of moral courage to stop operations or rebuild proper barriers.



Major Problems Identified

- **Negligence:** Disregard of known engineering hazards.
- **Poor Risk Management:** Underestimating worst-case disaster scenarios.
- **Ethical Evasion:** Failure to accept accountability for decisions leading to disaster.
- **Communication Breakdown:** Misleading information shared with public and workers.
- **Regulatory Corruption:** Close relationship between TEPCO and Japan’s nuclear regulators, “nuclear village” culture.



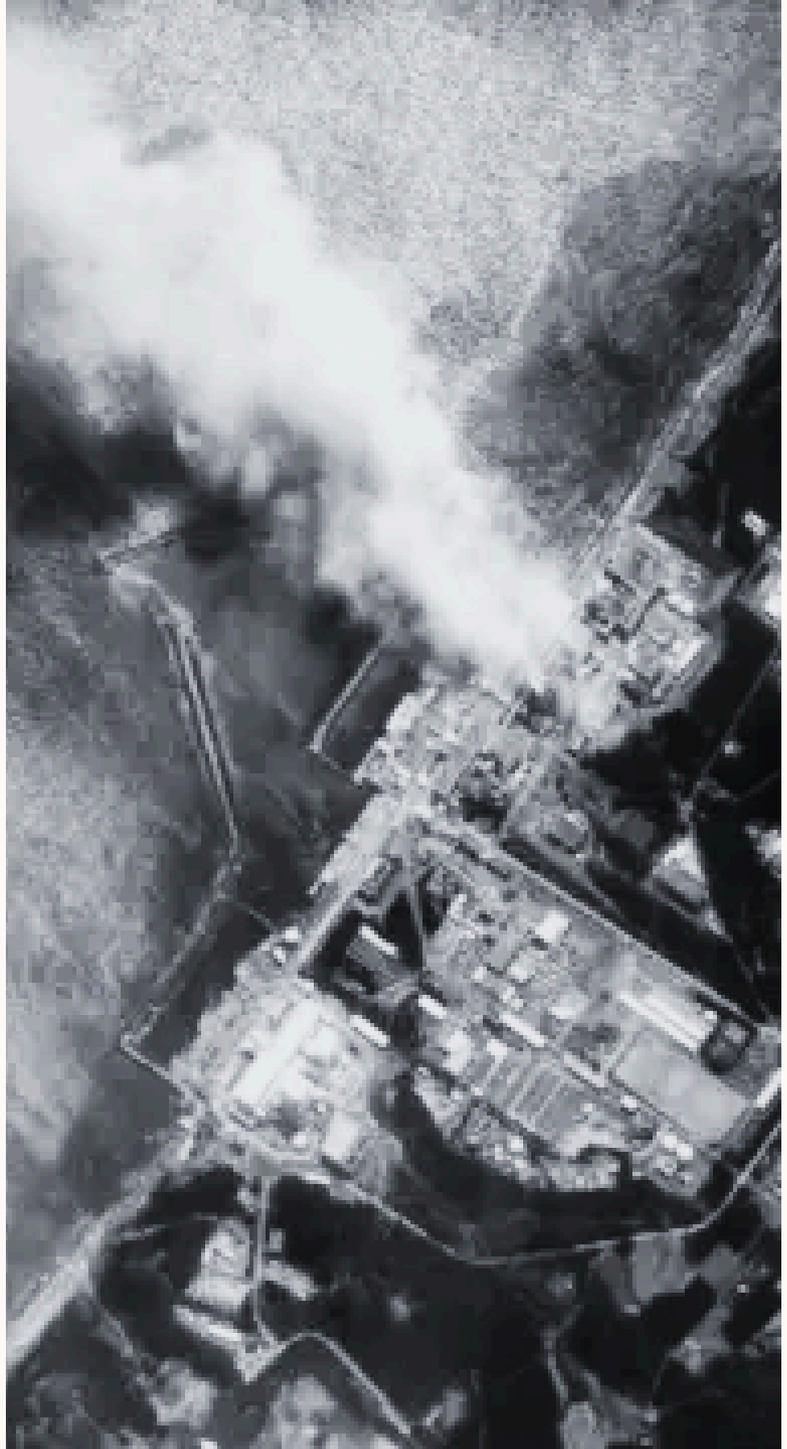
Ethical Analysis

Core Ethical Violations:

- Violation of Public Safety Duty: Ignored foreseeable risks contrary to the AIA and engineering codes that prioritize human life and safety.
- Lack of Integrity: Concealment of critical information and minimization of danger in public statements.
- Conflict of Interest: Regulatory bodies prioritized economic growth over safety concerns.
- Failure of Professional Competence: Improper site design and maintenance in hazardous zone.

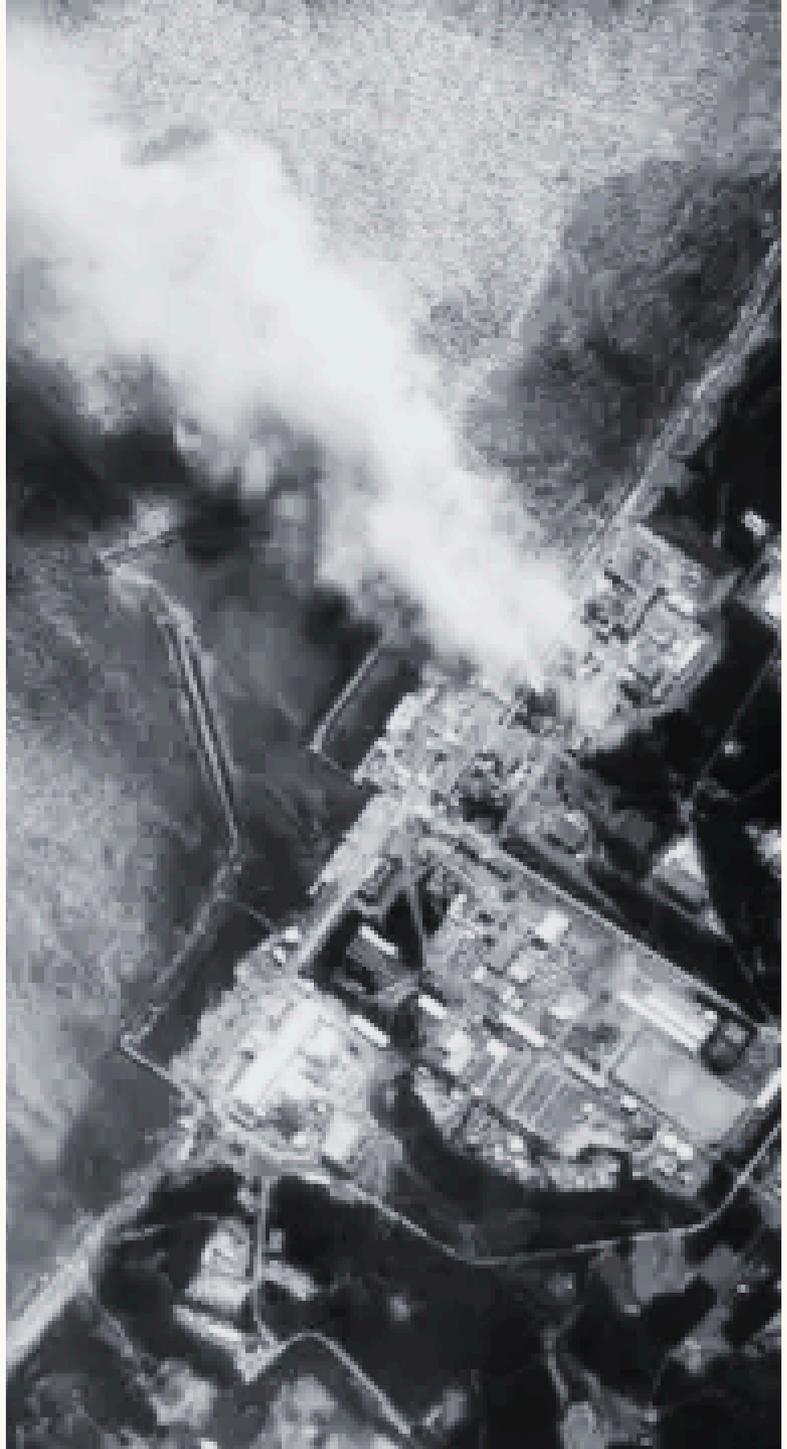
Ethical Dilemma:

Balancing economic interests and energy demand against potential catastrophic risk, where ethical decision should have favored safety.



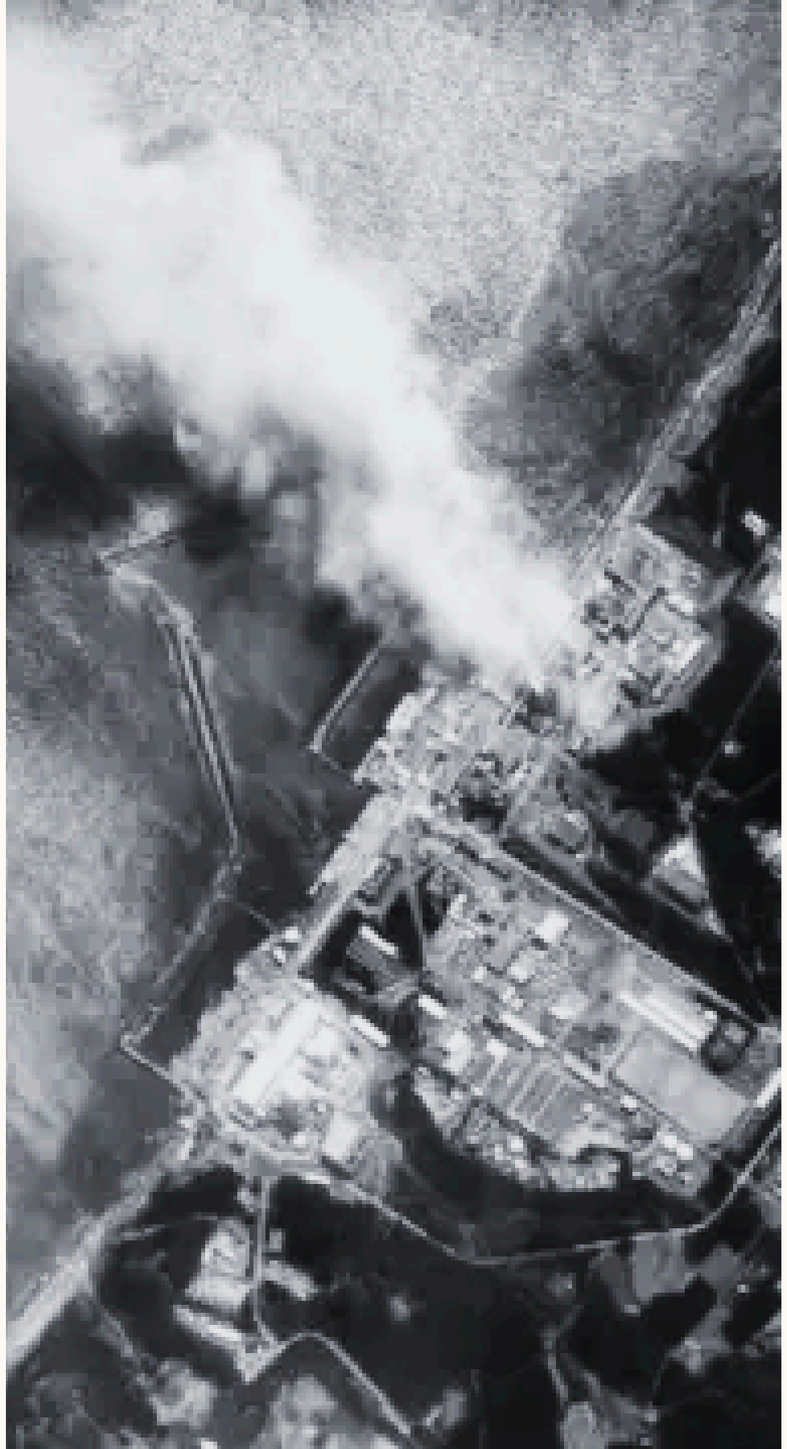
Consequences and Impact

- 160,000 people displaced – many never returned home.
- Widespread contamination of land and water resources.
- Long-term health concerns and psychological trauma.
- Financial losses over $200 billion – largest disaster in Japan’s history.
- Global impact on energy policy – many countries reconsidered nuclear energy safety.
- TEPCO executives faced criminal charges but were later acquitted, raising questions about justice and accountability.



Conclusions

- The disaster was preventable with proper ethical and engineering judgment.
- Core issue: failure to apply the precautionary principle in design and site selection.
- Lack of transparency and moral responsibility amplified the damage.
- Ethical oversight is as critical as technical innovation in large-scale projects.



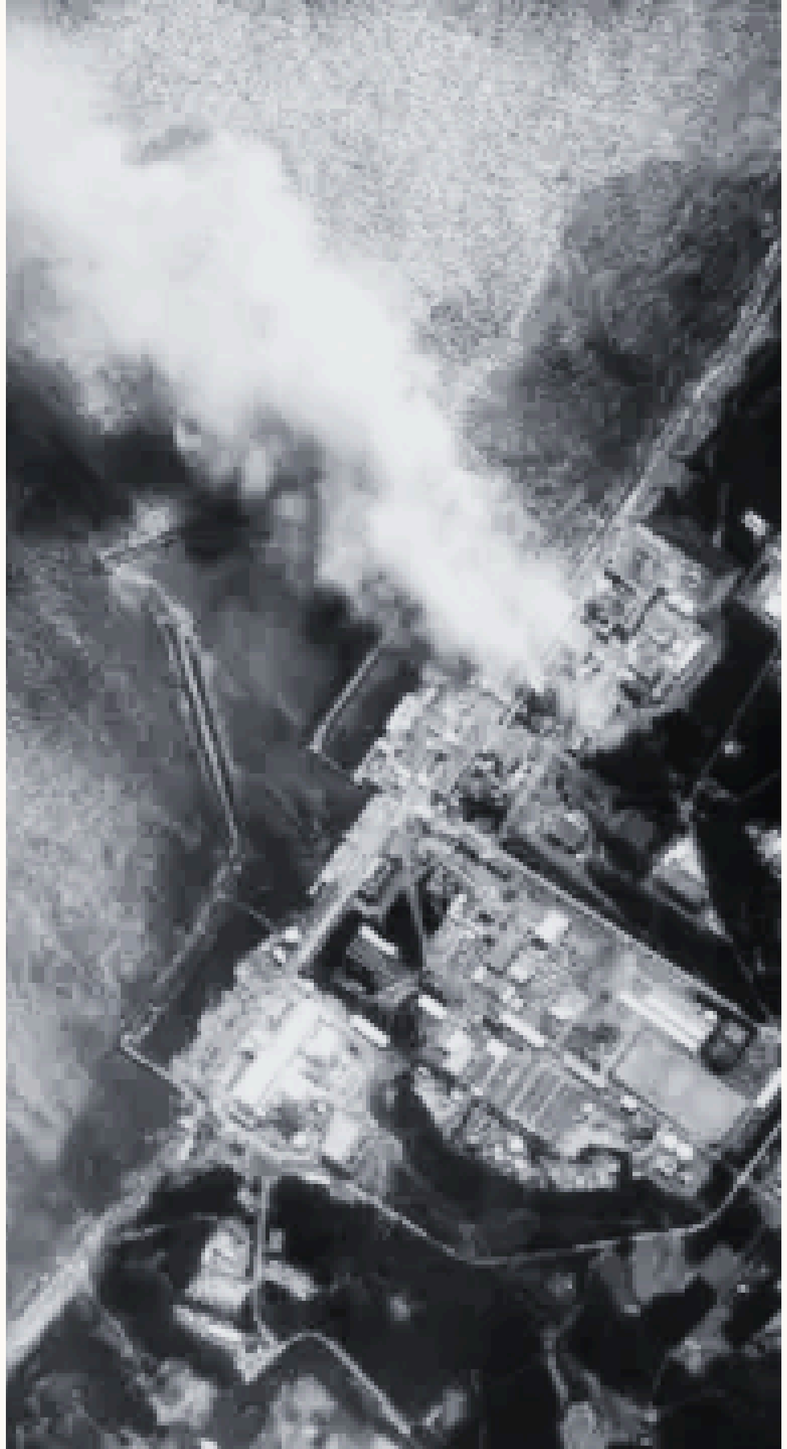
Recommendations/ Solutions

Professional and Technical Actions

- Enforce independent safety audits for high-risk facilities.
- Improve site planning and design standards based on updated hazard data.
- Install redundant cooling and power systems above flood levels.

Ethical and Organizational Actions

- Promote ethical training for engineers and architects focusing on risk communication and public safety.
- Encourage whistleblower protection to report safety concerns without retaliation.
- Separate regulatory bodies from industry influence to restore public trust.



Lessons for Future AEC Professionals

- Public welfare must always come first.
- Transparency and honesty are essential to ethical practice.
- Continuous risk assessment is vital through the lifecycle of projects.
- Ethical leadership is not optional—it defines the integrity of the profession.

THANK YOU!