Engineering Ethics

CHERNOBYL DISASTER

Group - 1

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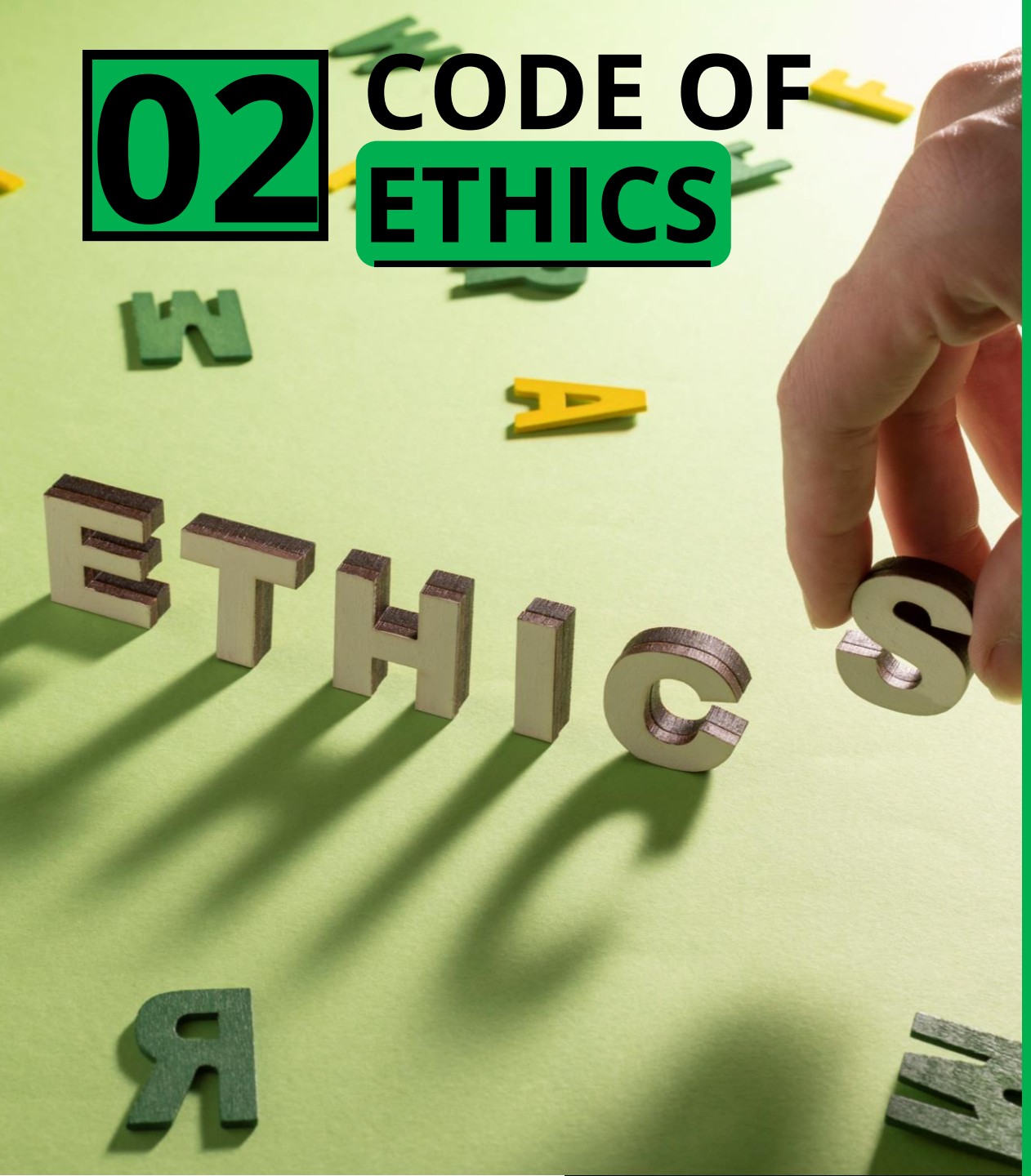
APRIL 25, 1986

PRIPYAT, NORTHEN UKRAIN

REACTOR 4 EXPLOSTION

TIMELINE

1:23 AM	SAFETY TEST
1:30 AM	POWER LEVEL DROP
1:40 AM	AZ-5
1:42 AM	EXPLOSION



02 CODE OF ETHICS

What are Ethical Codes?

- Guidelines for responsible engineering practices
- Promote safety, integrity, and accountability

Why Are They Important?

- Ensure public trust
- Guide decision-making
- Protect stakeholders

02 PUBLIC SAFETY IN ENGINEERING

Chosen Code

Engineers shall hold paramount the safety, health, and welfare of the public

Why It Matters?

- Builds public trust
- Prevents harm and risks

02 PUBLIC SAFETY IN ENGINEERING

Application

- Safe infrastructure
- Medical devices
- Environmental protection

Real-World Scenarios

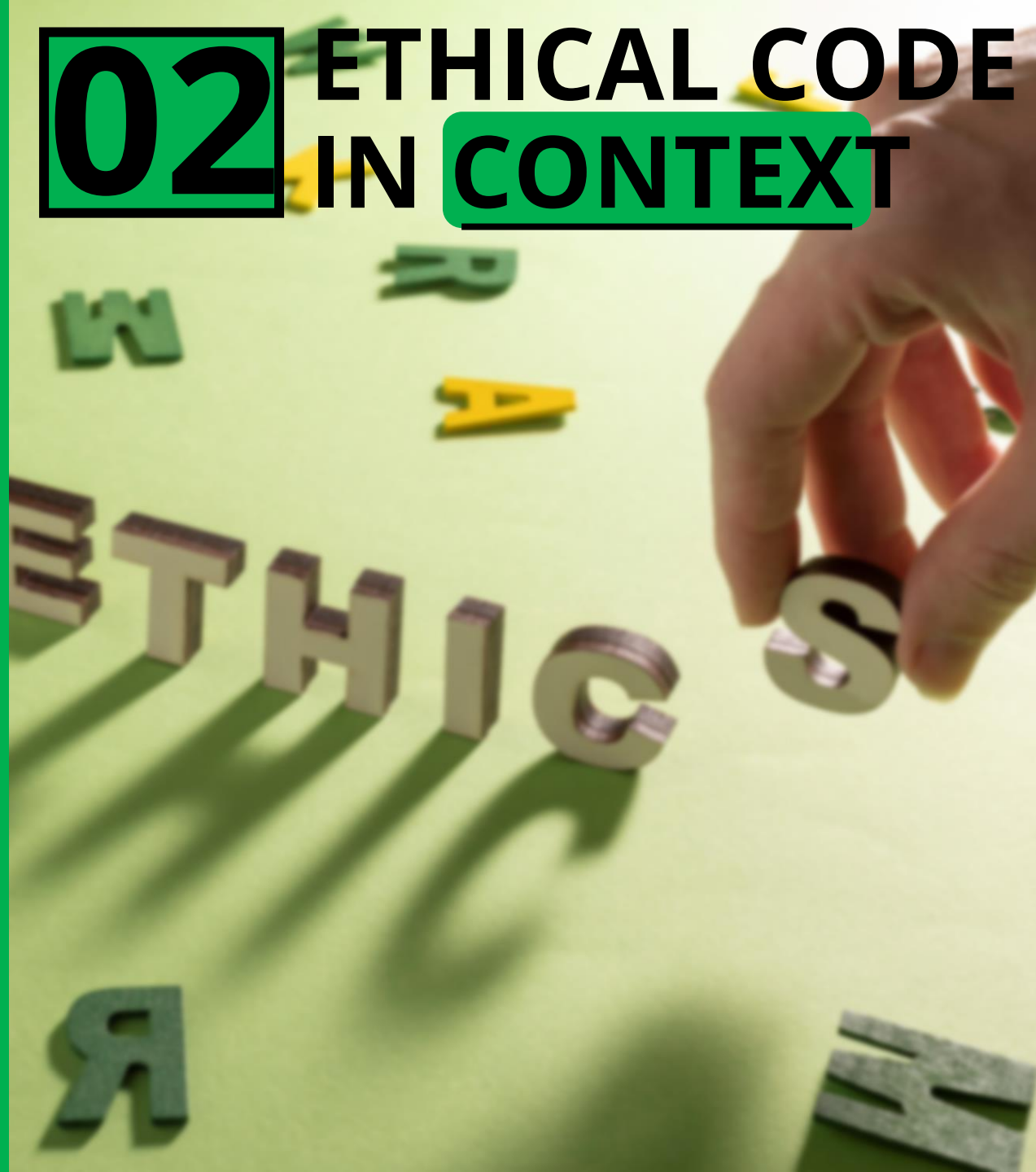
- Bridge and building safety
- Clean energy projects
- Reliable medical technologies



02 ETHICAL CODE IN CONTEXT

Violation of Ethical Code

- Ignored safety protocols
- Reactor design flaws
- Poor operator training
- Lack of communication
- Neglected public safety



Ethical Dilemma

Ethics vs. Pressure

1.Should workers follow unsafe orders or refuse and face punishment?
2. Should they stop the test due to inexperience or continue under pressure?
3. Should they delay the test for safety or proceed to meet expectations?
4. Should they speak out despite threats or stay silent to protect themselves?

Ethical Dilemma…

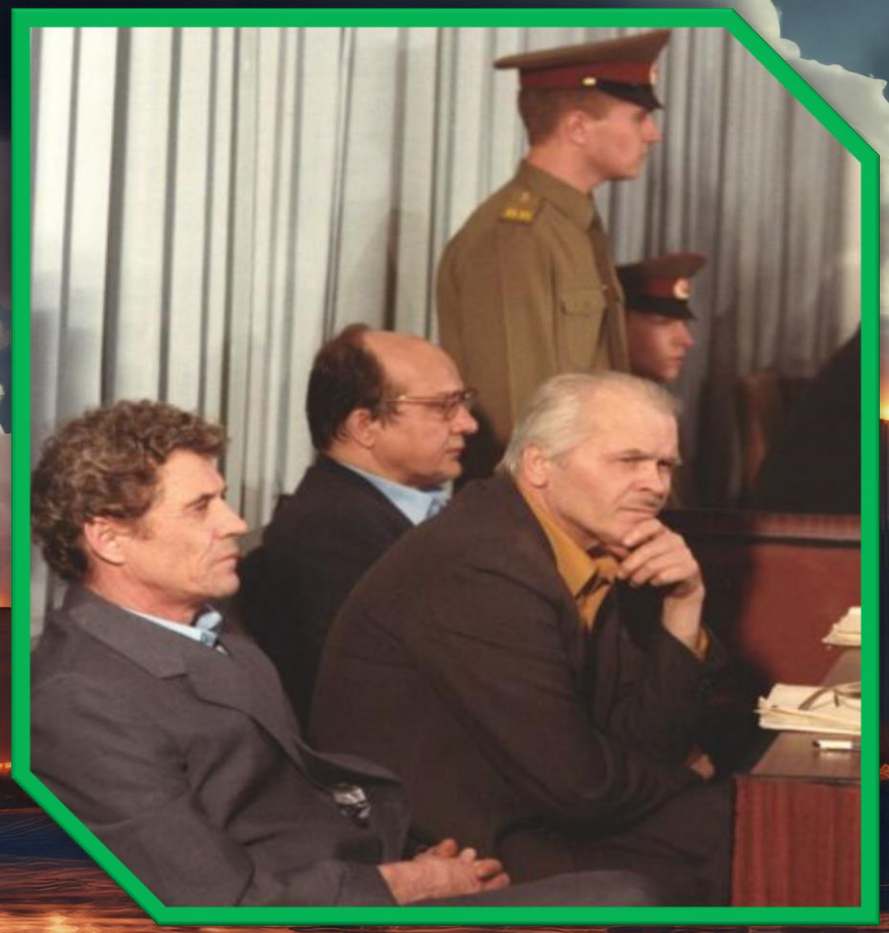
Safety vs. Expectations

5. Should they reveal the flaw to save lives or hide it to protect the government's image?
6.Should they evacuate immediately and risk panic or delay to avoid attention?
7. Should they warn workers of the risks or hide the truth to ensure cleanup was done?

Ethical Dilemma…

Responsibility vs. Self-preservation

8. Should they take responsibility or find scapegoats to protect their image?
9. Should they risk their career to warn others or stay silent under pressure?



Resolutions of Dilemmas

1. Identify the Ethical Issues

- Deadlines prioritized over safety, disabling critical systems.
- Operators lacked training to understand risks.
- Management pressured unsafe testing.
- Hidden design flaws left operators unprepared.

2. Gather the Relevant Facts

- Test conducted under unsafe conditions to improve reactor safety.
- Safety systems disabled during the test.
- Reactor's low-power instability and design flaws were known but hidden.
- Soviet bureaucracy discouraged transparency and oversight

3. Evaluate the Options

- Halt the Test
- Proceed with Caution
- •Proceed as Planned

Resolutions of Dilemmas

4. Make a Decision and Justify

- Safety-First Culture
- Comprehensive Training and Education

Resolutions of Dilemmas

- Transparency in Design and Operation
- Independent Oversight and Regulation

Resolutions of Dilemmas

- Decision-Making Under Uncertainty
- Ethical Leadership and Accountability
- International Collaboration

Conclusion

01 Preventive Actions

- Ensure proper training, adherence to safety protocols, and improved reactor design.

02 Role of Engineering Ethics

- Emphasize accountability, safety-first principles, and ethical decision-making.

Conclusion

Conclusion

03 Relevance of Ethical Code

- Highlights the need for safety, integrity, and professional responsibility.

04 Accountability

- Shared responsibility among engineers, management, and regulators.

Conclusion

Any Question?

Group - 1 Engineering Ethics