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United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# THE NRC: WHO WE ARE AND WHAT WE DO


Presentation updated
February 2018

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# WHO WE ARE

The Energy Reorganization Act of 1974

Established the NRC to independently regulate commercial use of nuclear material, including nuclear power.

Other duties of the former Atomic Energy Commission were assigned to the Department of Energy.

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# WHO WE ARE

The NRC is headed by five Commissioners, all nominated by the President and confirmed by the Senate for staggered five-year terms. No more than three can be from the same political party.

The President designates one member of the Commission to serve as Chairman and official spokesperson.

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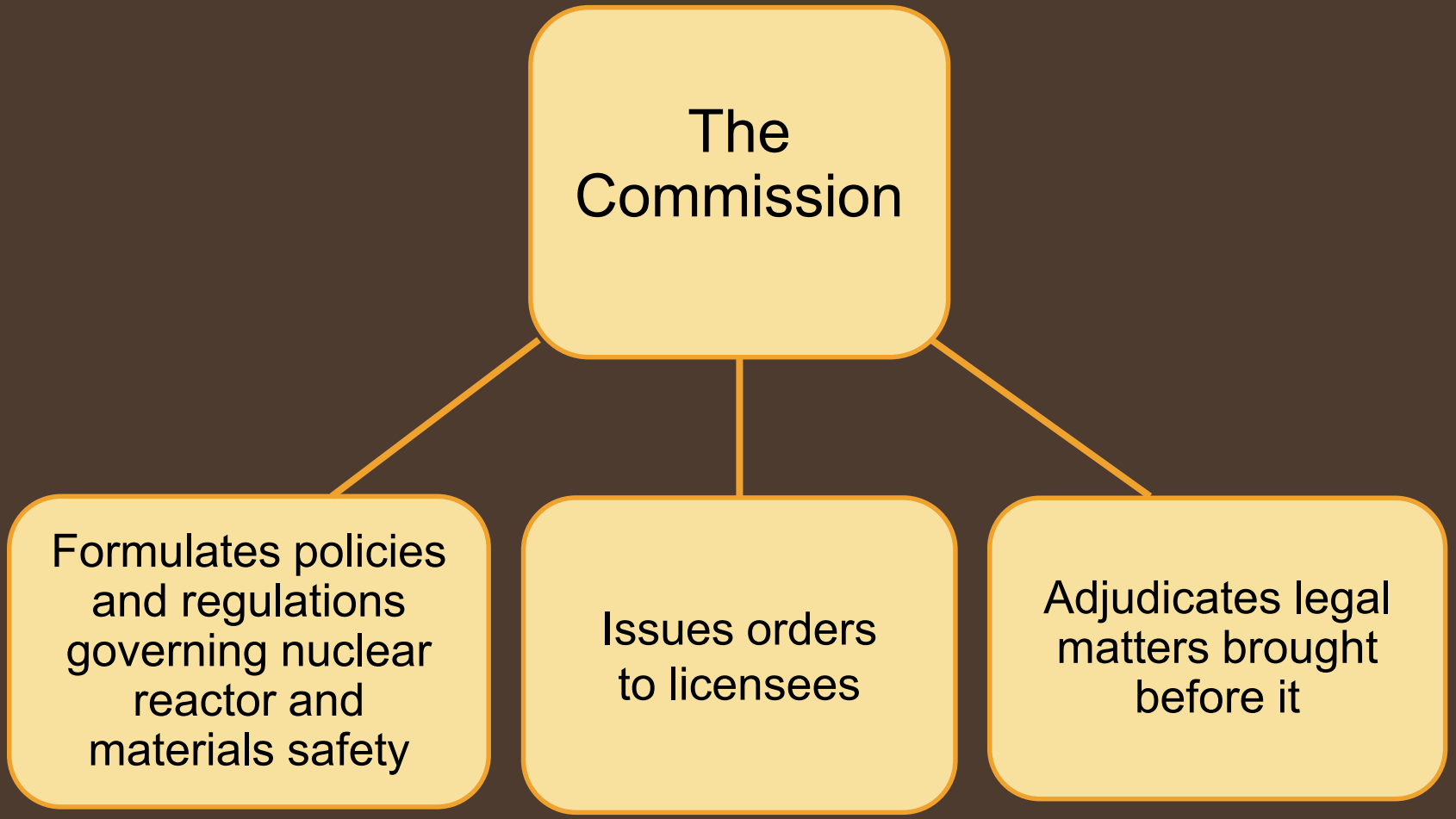
# WHO WE ARE



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# WHO WE ARE

The NRC employs approximately 3,000 people among its suburban Maryland headquarters and four regional offices in Pennsylvania, Georgia, Illinois and Texas including at least two Resident Inspectors at each nuclear power plant site.

The NRC receives a budget each fiscal year from Congress. By law, the NRC must recover, through fees billed to licensees, approximately 90 percent of its budget authority.

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# OUR MISSION

**We license and regulate the Nation's civilian use of radioactive materials to protect public health and safety, promote the common defense and security, and protect the environment.**

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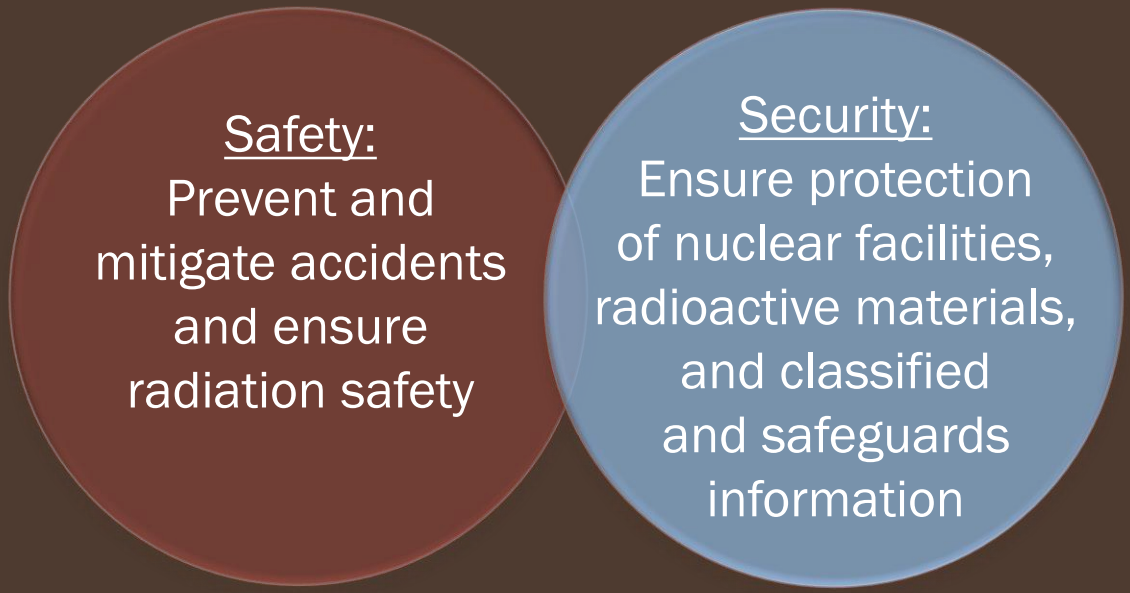
# HOW WE MEET OUR MISSION



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# SOME NUCLEAR FACTS

- Commercial nuclear power plants supply about 20 percent of electricity in the U.S.
- Nuclear materials are used in medicine for cancer treatment and diagnosis.
- Nuclear materials are widely used in industry, such as in density gauges, flow measurement devices, radiography devices and irradiators.
- Small amounts of radioactive material are used in common items such as smoke detectors, exit signs and some watches.

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# SOME RADIATION FACTS

Radiation occurs naturally in the soil, air and water. The average person in the U.S. is exposed to about 620 millirem of radiation a year.

Half of that exposure comes from natural sources (also called background radiation.)

The other half largely comes from nuclear medical exams and treatments.

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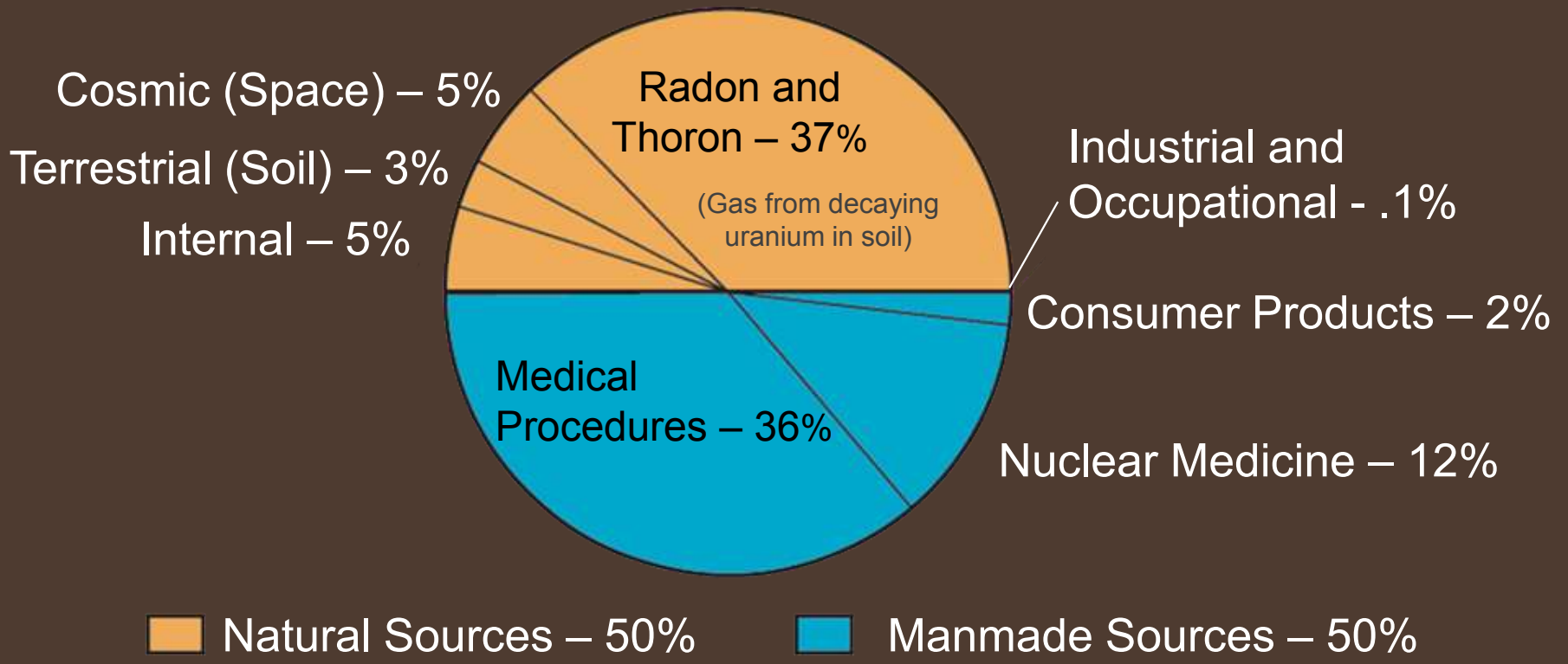
# SOME RADIATION FACTS

## Sources of Radiation Exposure in the United States




Source: NCRP Report No. 160 (2009)
www.NCRPpublications.org

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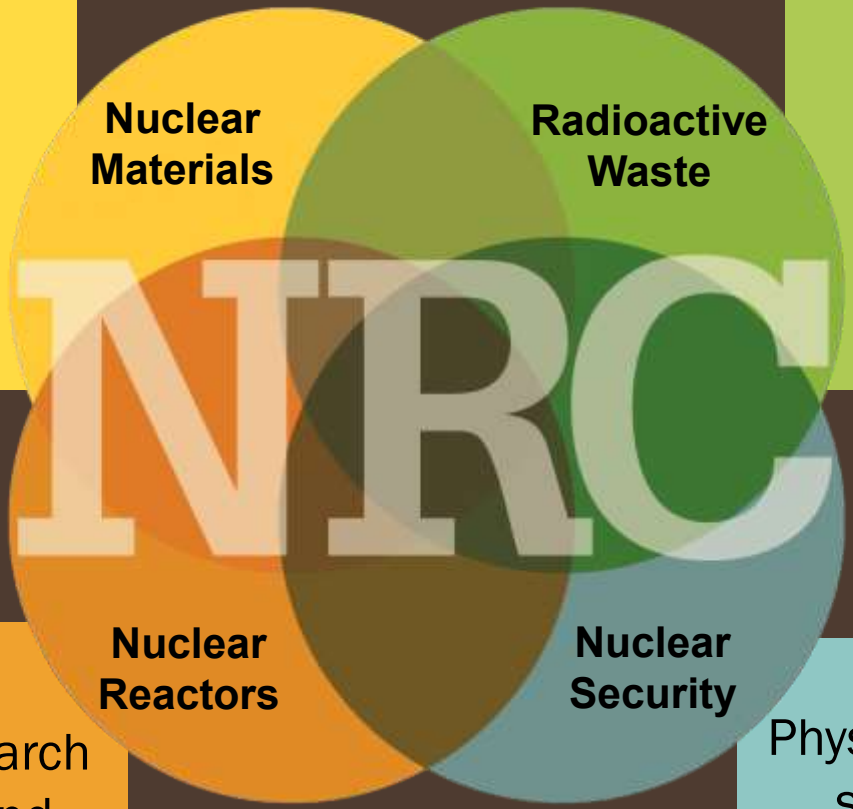
# THE NRC REGULATES:

Radioactive materials for medical, industrial and academic use




Transportation, storage and disposal of nuclear material and waste, and decommissioning of nuclear facilities

Commercial power reactors, research and test reactors and new reactor designs

Physical security, source security and cyber security

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# WHAT WE DON'T DO:

- Regulate nuclear weapons, military reactors or space vehicle reactors (These are regulated by other federal agencies.)
- Lobby for nuclear power (The nation's nuclear agenda is set by the President and the Congress.)
- Own or operate nuclear power plants
- Regulate naturally occurring radon or X-rays (These are regulated by states or other federal agencies.)

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# WHAT WE DO:

- Set Rules
- Licensing
- Oversight
- Enforcement
- Evaluation
- Provide Support
- Incident Response

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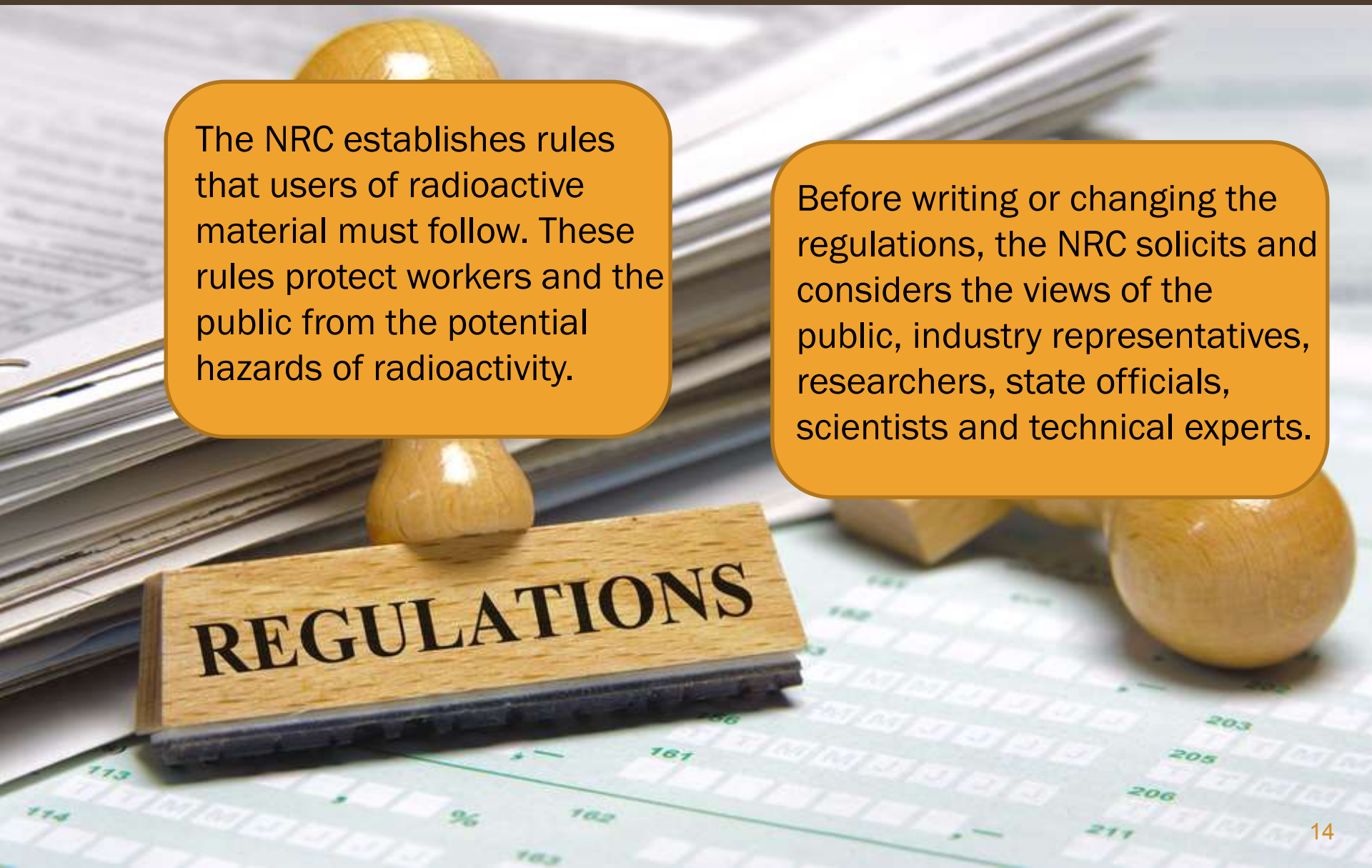
# WHAT WE DO: SET RULES




The NRC establishes rules that users of radioactive material must follow. These rules protect workers and the public from the potential hazards of radioactivity.

Before writing or changing the regulations, the NRC solicits and considers the views of the public, industry representatives, researchers, state officials, scientists and technical experts.

# WHAT WE DO: LICENSING

Any organization or individual intending to have or commercially use nuclear materials that are covered by the NRC's programs must obtain a license from the NRC or an Agreement State (a state that has entered into an agreement with the NRC to regulate nuclear materials.)

These licenses specify the types and quantities of material, the activities it may be used for and additional conditions.

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# WHAT WE DO: OVERSIGHT

The NRC inspects licensed facilities to ensure they meet regulations and the terms of their license. The NRC also investigates allegations of wrongdoing.

# WHAT WE DO: ENFORCE REGULATIONS

When violations are uncovered, the NRC can:

- Issue a notice of violation;
- Impose fines;
- Modify, suspend or revoke a license, for very serious instances of noncompliance;
- Prohibit individuals who have engaged in deliberate misconduct from working in NRC jurisdiction; and
- Refer apparent wrongdoing violations to the Department of Justice.

# WHAT WE DO: EVALUATION

- The NRC collects and analyzes information about reported events at reactors and materials facilities to assess safety and identify any potential weaknesses in design, operations, procedures or equipment.
- The NRC also identifies and addresses potential safety-related issues that are common among these facilities (called generic safety issues.)

# WHAT WE DO: SUPPORT

Regulatory research provides technical advice, analytical tools and information to support NRC decisions, focusing on safety and security.

Two committees provide independent advice and review of NRC staff proposals:

- Advisory Committee on Reactor Safeguards
- Advisory Committee on Medical Uses of Isotopes

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# WHAT WE DO: INCIDENT RESPONSE

The NRC maintains an active program to ensure readiness and response to an event at a nuclear facility potentially affecting public health and safety. Through response centers at its headquarters and regional offices, the NRC provides consultation, support, and assistance to licensees and public officials.

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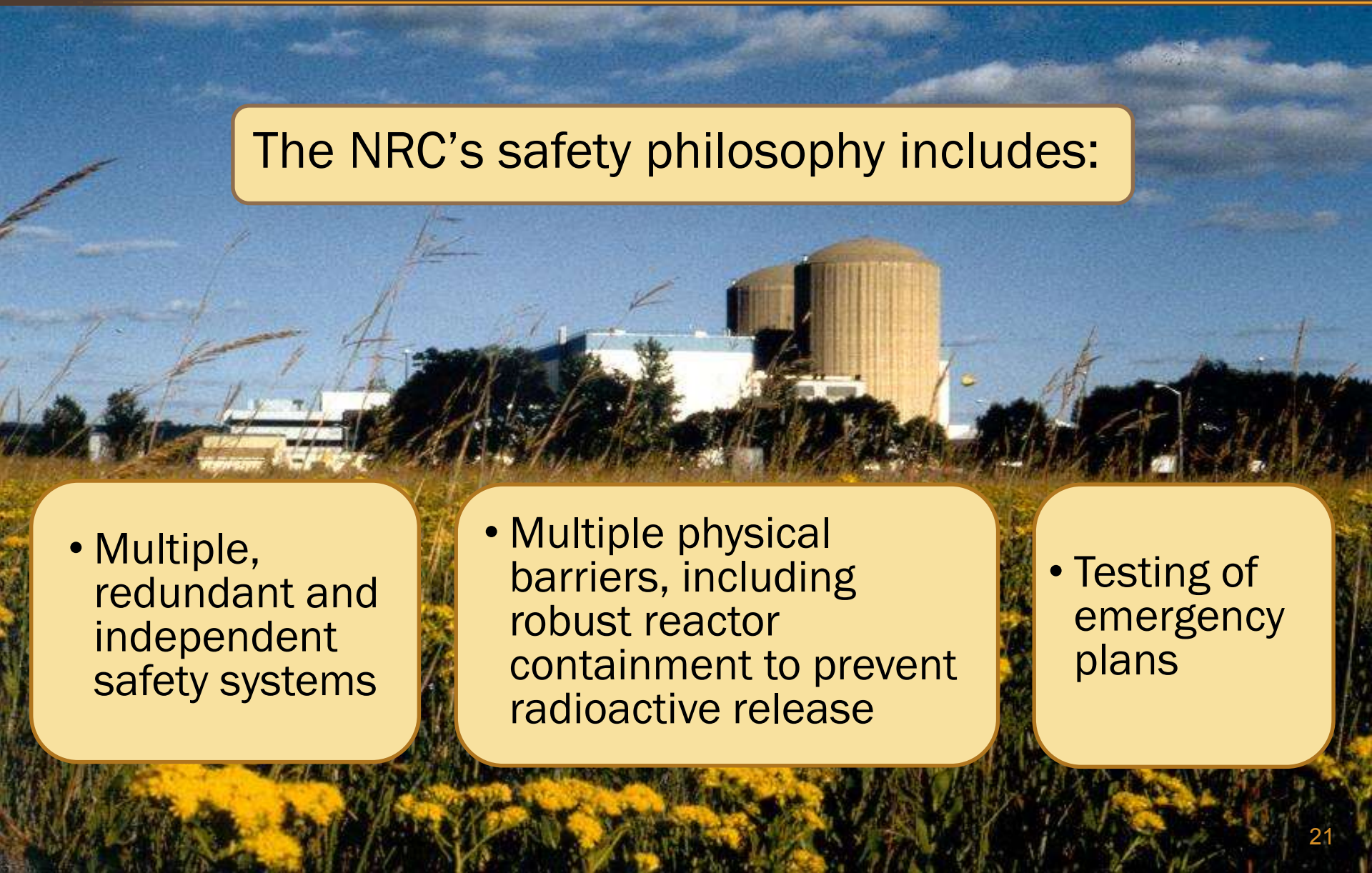
# REGULATING REACTORS



The NRC's safety philosophy includes:

- Multiple, redundant and independent safety systems
- Multiple physical barriers, including robust reactor containment to prevent radioactive release
- Testing of emergency plans

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# REGULATING REACTORS

The NRC verifies compliance with regulations. Licensees are required to report plant safety data and events to the NRC.

In addition to the NRC Resident Inspectors onsite who perform daily inspections, special inspectors also perform periodic inspections.

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# REGULATING REACTORS

The NRC requires:

Regular maintenance to assure equipment is repaired or replaced in a timely manner, and

Continual training and qualification of nuclear plant operators.

# REGULATING NEW REACTORS

The new reactor license review process begins with the submission of a combined license application. Other steps include safety and environmental reviews and opportunities for public input before the Commission makes its decision.

## New Reactor Licensing Process

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# REGULATING MATERIALS

**The NRC's materials program covers:**

- Facilities that use radioisotopes to diagnose and treat illnesses;
- Devices such as radiography cameras and nuclear gauges;
- Decommissioning and environmental remediation; and
- All phases of the nuclear fuel cycle from uranium recovery to enrichment to fuel manufacture to spent fuel storage and transportation.

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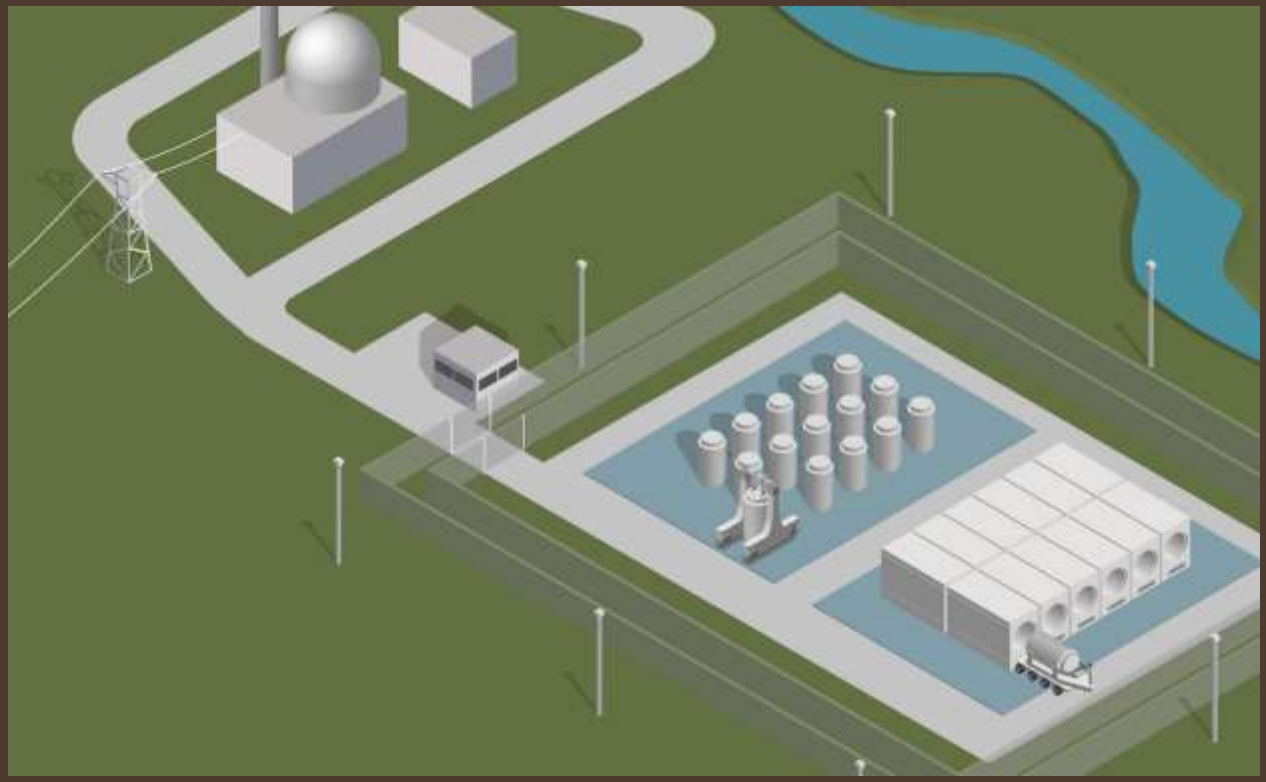
# REGULATING WASTE

The NRC oversees the safe storage of spent nuclear fuel including spent storage facilities.



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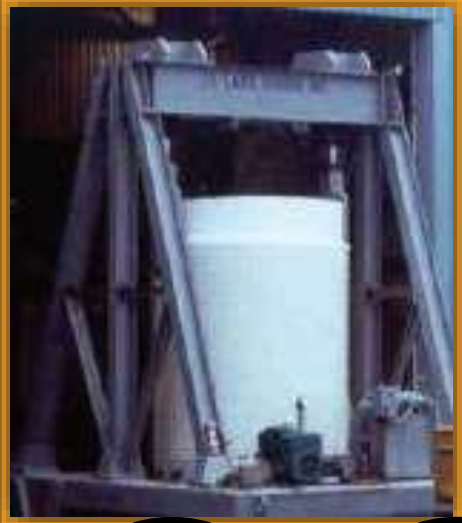
# REGULATING WASTE



The NRC also certifies spent fuel storage and transportation casks, approves transport routes and security plans, and regulates disposal of nuclear waste.

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# REGULATING SECURITY


The NRC has long recognized the importance of securing nuclear facilities and materials.

Nuclear power plants are built to withstand disasters both natural and man-made, and are among the best-protected commercial facilities in the U.S.

The NRC works closely with DHS, the FBI and others to monitor threat conditions.

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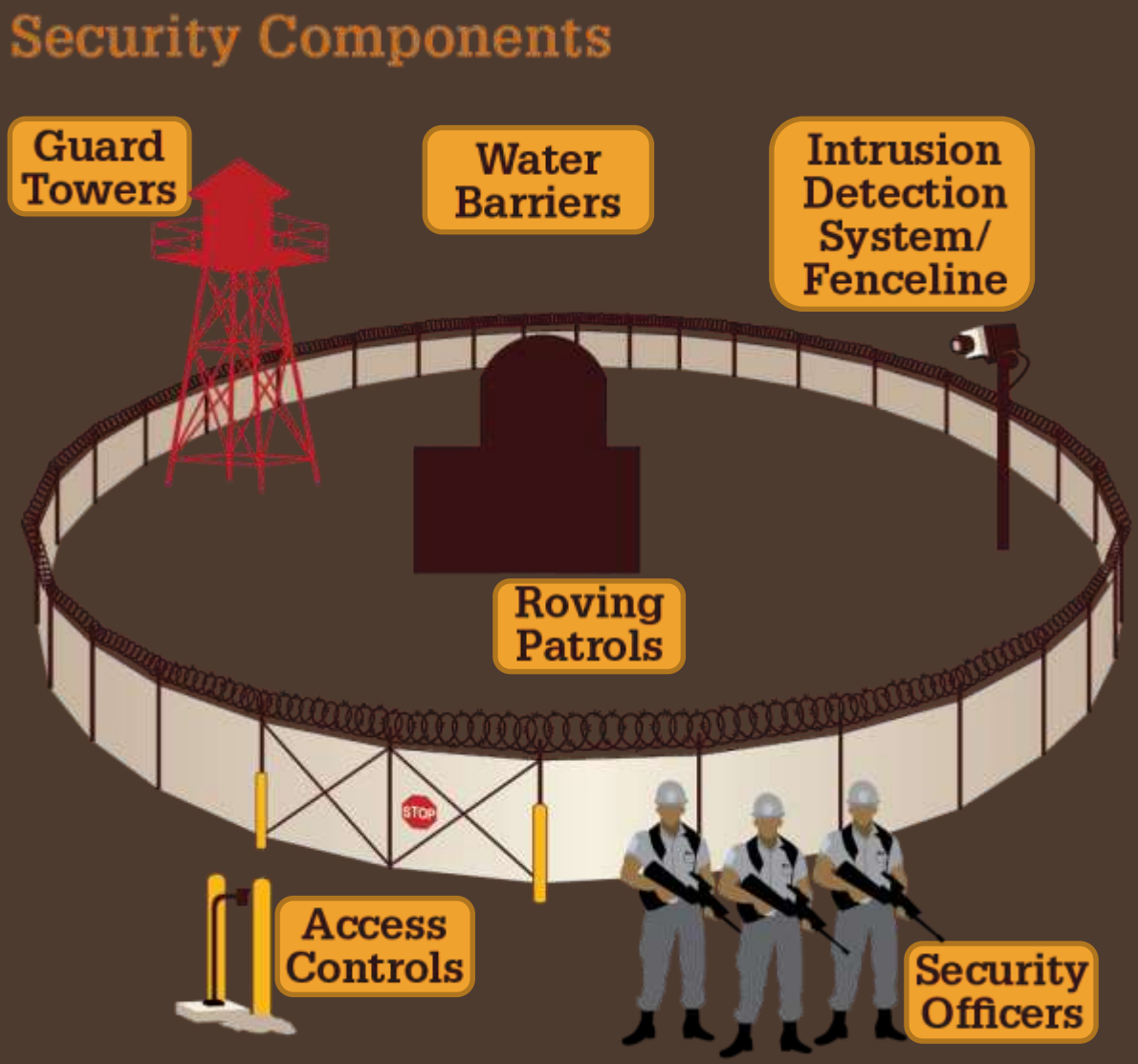
# REGULATING PHYSICAL SECURITY

The NRC requires such security measures as:

- Well-armed and well-trained security forces;
- Surveillance and perimeter patrols;
- State-of-the-art site access equipment and controls;
- Physical barriers and detection zones; and
- Intrusion detection systems and alarm stations.



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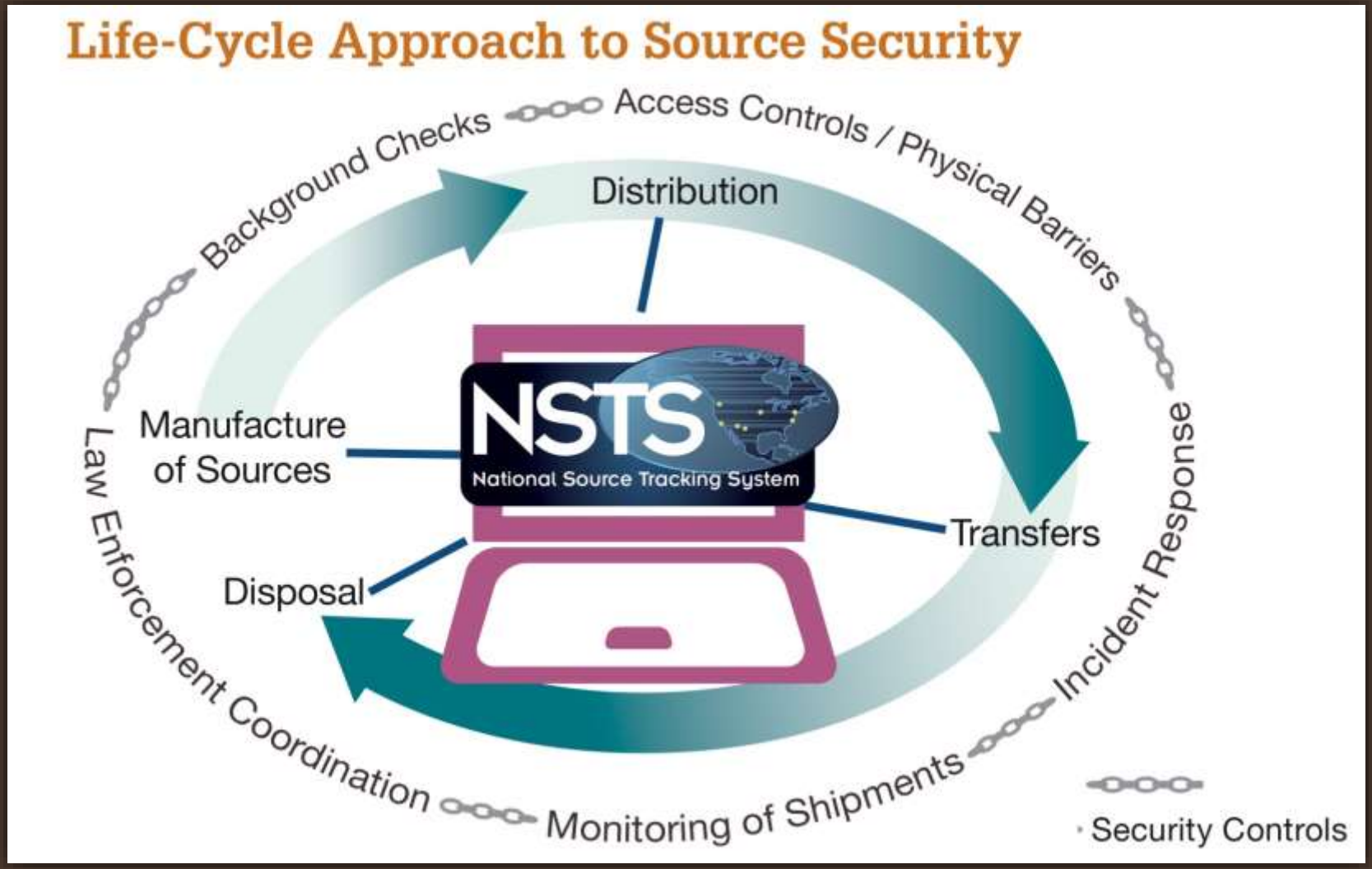
# REGULATING SOURCE SECURITY



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# REGULATING CYBER SECURITY

- The NRC conducts regular cyber security inspections of nuclear plants to ensure adequate protection of systems and the information they contain from sabotage or malicious use.
- The NRC's cyber security staff includes technology and threat experts who constantly evaluate and identify emerging cyber-related issues.

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# MAINTAINING READINESS

The NRC Operations Center is staffed 24 hours a day to monitor events and initiate response activities. The staff is prepared to work with other federal agencies under the National Response Framework to respond to significant incidents involving NRC licensees. In addition, the NRC conducts regular exercises to test licensee emergency response and uses mock adversaries to test security response.

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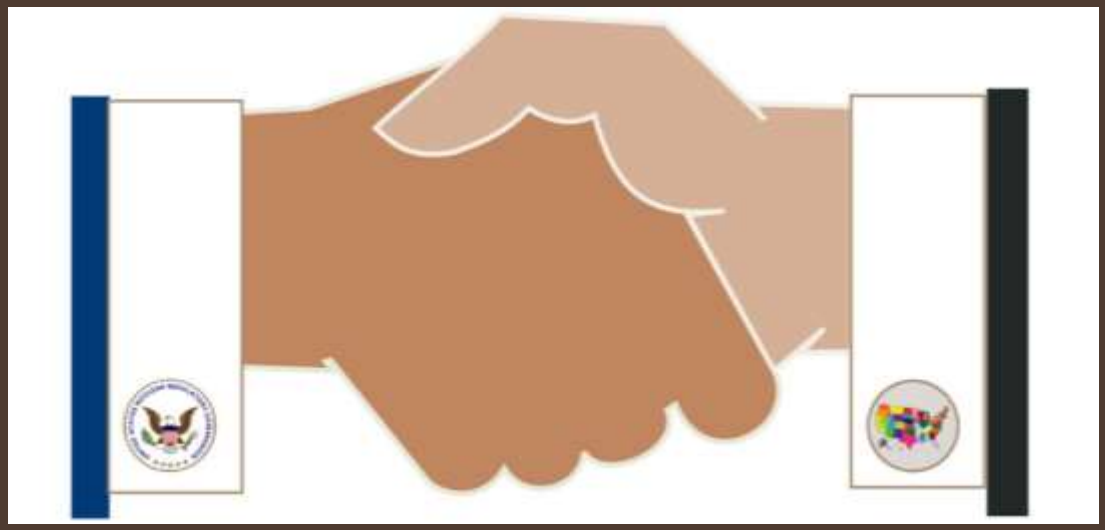
# PARTNERS IN REGULATION



The NRC has granted Agreement States authority to regulate certain radioactive material. Those states develop regulations and appoint officials to ensure the materials are used safely and securely. The NRC retains authority over nuclear reactors, fuel fabrication facilities and certain amounts of radioactive material that can fission (split apart.)

# PARTNERS IN REGULATION

The NRC works with many other agencies and organizations including:

- Department of Energy
- Environmental Protection Agency
- Department of Homeland Security
- Federal Bureau of Investigation
- Department of Health and Human Services
- U.S. Congress
- International Atomic Energy Agency

# OPEN TO THE PUBLIC

The NRC places a high priority on keeping the public and stakeholders informed of its activities. At www.nrc.gov, you can:

- Find public meeting dates and transcripts;
- Read NRC testimony, speeches, press releases and policy decisions;
- Access the agency's Electronic Reading Room to find NRC publications and documents; and
- Connect with the NRC on social media sites.

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# FOR MORE INFORMATION

- Nuclear energy and energy policy: www.doe.gov;
- Radiation and health effects: www.epa.gov;
- U.S. Homeland Security initiatives: www.dhs.gov;
- International nuclear affairs: www.iaea.org;
- Being prepared for any emergency: www.ready.gov .

You can also contact the NRC at 1-301-415-7000, 1-800-368-5642, or by e-mail at OPA.Resource@nrc.gov.