

THE NUCLEAR WASTE POLICY ACT

Purpose:

This lesson will introduce students to the Nuclear Waste Policy Act (NWPA) and our Nation's plans for managing high-level nuclear waste. Students will gain insight into the U.S. Congress's legislation that addresses the complex task of siting, transporting, and disposing of this waste.

Concepts:

1. Many solutions have been explored over a 30-year period. Today the majority of informed technical opinion holds that disposal in deep geologic repositories is the preferred method of permanent isolation.
2. The purpose of the Nuclear Waste Policy Act of 1982 and its amendments is to provide for the safe handling, storage, and disposal of our Nation's high-level nuclear waste.
3. The Federal Government has established that the management of nuclear waste is the responsibility of the present generation and should not be left for future generations.
4. Those involved with the program are dedicated to making technically sound decisions and to work with affected parties to identify potential negative impacts and to avoid, mitigate, or compensate for such impacts.
5. The NWPA provides for independent oversight and review.

Duration of Lesson:

Two 50-minute class periods

Objectives:

As a result of participation in this lesson, the learner will be able to:

1. name key provisions of the Nuclear Waste Policy Act;
2. identify key agencies involved in the high-level radioactive waste management program;
3. discuss whether this generation or future generations should provide for disposal of nuclear waste currently in storage;
4. identify specific attempts to allow for participation of affected parties; and
5. identify ways in which independent oversight of DOE is provided for.

Skills:

Analyzing, critical thinking, discussing, taking notes, reading, summarizing, viewing

Vocabulary:

Affected parties, Benefits Agreement, certification, environmental impact statement, EPA, MRS, MRS Review Commission, notice of disapproval, Nuclear Waste Fund, Nuclear Waste Policy Act of 1982, Nuclear Waste Policy Amendments Act of 1987, Nuclear Waste Technical Review Board, OCRWM, site characterization, Yucca Mountain

Materials:

Reading Lesson

The Nuclear Waste Policy Act: An Overview, p. SR-1

Activity Sheet

Overview – Nuclear Waste Policy Act, p. 53

Videotapes

Managing the Nation's Nuclear Waste (11 minutes)

Worldwide Waste Management (3 minutes, 25 seconds)

The Monitored Retrievable Storage System (8 minutes, 15 seconds)

(order all tapes free of charge from the OCRWM National Information Center, 1-800-225-6972; within Washington, DC, 488-6720)

Suggested Procedure:

Part I

1. You may wish to introduce this topic by showing the videotape entitled *Managing the Nation's Nuclear Waste*. It might be wise for students to take notes as they view the film to facilitate discussion of the video's key themes.

Sample videotape discussion questions - *Managing the Nation's Nuclear Waste*

- a) Where is nuclear waste stored now? How is it stored?
- b) Why is permanent disposal considered necessary?
- c) What disposal option has been chosen? Others considered?
- d) How is nuclear waste transported safely? Give evidence to support your answer.
- e) What site has the U.S. Congress directed the Department of Energy (DOE) to investigate for its potential suitability for the Nation's first geologic repository? What steps are being taken to study this site?

(It is important that students understand that no site has been selected for a permanent repository. The Yucca Mountain Site has been selected by Congress for site characterization. Extensive studies will be conducted to determine whether the site is appropriate for a repository. Additionally, the State of Nevada has received grants from the Nuclear Waste Fund, which enables it to monitor DOE's activities and study the issues independently.)

- f) The Department of Energy, Department of Transportation, Environmental Protection Agency, Nuclear Regulatory Commission, State and local governments, Indian Tribes, and the general public have all been involved in the implementation of the Nuclear Waste Policy Act. Why do you think so many different bodies, agencies, and individuals have been involved in this?
2. Assign the reading lesson and reading review entitled *The Nuclear Waste Policy Act: An Overview* to be completed in class or as homework.

Part II

1. Review the assignment *Overview – Nuclear Waste Policy Act*.
2. In 1820 Thomas Jefferson wrote:

“I know of no safe depository of the ultimate powers of the society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education.”

 - a) Have students write an essay analyzing the provisions of the Nuclear Waste Policy Act and its amendments and the Department of Energy’s plans for management of our Nation’s high-level waste in reference to the Jefferson quotation given above.
 - b) Ask students what they think Thomas Jefferson would have thought of the provisions of the 1982 law and the 1987 Amendments Act, as well as DOE’s plan for the fulfillment of the directives issued to them.
 - c) This analysis could also be used as the starting point for a class discussion on participatory democracy with the NWPA and Amendments Act of 1987 serving as a current affairs example.
3. Draw a schematic of the process that occurs if the site being investigated is found suitable for the construction of a geologic repository. Have students assume for this exercise that the State or affected Indian Tribe disapproves and Congress must decide whether to uphold or override the disapproval. Be sure the students include the following in their schematic:
 - a) DOE recommendation to the President
 - b) Recommendation of the President to Congress
 - c) Notice of Disapproval
 - d) Congress decides whether or not to override the disapproval
 - e) DOE applies to the Nuclear Regulatory Commission (NRC) for authorization to construct a repository (assuming Congress has overridden the disapproval)
 - f) Begin construction

Ask students what effect there would be on the above-listed process if the affected State or Indian Tribe had entered into a Benefits Agreement as provided for in the law.
4. Students may be interested in the efforts of other countries toward managing nuclear waste. You may want to conclude this lesson by watching and discussing the brief video entitled *Worldwide Waste Management*.

Sample Videotape Questions - *Worldwide Nuclear Waste Management*

- a) Which country relies most heavily on nuclear power for electricity?
- b) What are some of the benefits of using nuclear energy? What are some challenges?
- c) How do other countries plan to dispose of spent fuel?

Teacher Evaluation of Learner Performance:

Student completion of reading review and participation in group activity will indicate level of comprehension.

Enrichment:

1. Have students research the *Code of Federal Regulations*, Volume 10, CFR Part 960. **(Order free of charge from the OCRWM National Information Center at 1-800-225-6972; within Washington, DC, 488-6720.)** This might include preparation of a short paper discussing what the *Code of Federal Regulations* is and an application of this to the NWPA and Amendments Act. Students should be asked to discuss the difference between a guideline and a regulation, between a guideline and a law, what process took place in order for this law to pass, what steps were necessary for passage, who voted, etc.
2. The League of Women Voters publication, *The Nuclear Waste Primer*, chapter entitled "Roles for Citizens," includes readings on the role of the public in the high-level waste management program and what citizens can do to stay informed on the issues and influence the development of the program. The readings on low-level waste management concern what citizens can do at both the State and national level. You may wish to have students read this and prepare a role-play activity to simulate interaction of the public and the various government agencies involved with the execution of the NWPA and Amendments Act of 1987. This role-play could be combined with the enrichment activity described at the end of the next lesson entitled *Nuclear Waste: Challenges and Solutions*. The Nuclear Waste Primer may be **ordered free of charge from the OCRWM National Information Center at 1-800-225-6972; within Washington, DC, 488-6720.**
3. Newspaper clippings, magazine articles, etc., expressing various points of view regarding nuclear waste issues may be used in any number of different ways. For example:
 - a) Assign a different article to each student. Have students share the point of view expressed in their article with the class and discuss whether they agree or disagree with the author.
 - b) Have students role-play the authors of the newspaper articles they have read.
 - c) Conduct a mock public hearing with students representing the point of view expressed in the article they have read. You may wish to ask students with very strong opinions on the matter to present the opposing point of view at the hearing.
 - d) Communicate the point of view expressed in a student's article by creating an editorial cartoon.
 - e) Discuss the role of the media in addressing controversial issues in a democratic society.
 - f) If you have required students to keep a nuclear waste issues scrapbook during this course of study, you may prefer to direct them to use these scrapbooks to aid in the preparation for a mock public hearing, role-play and class discussions.A selection of newspaper articles and press releases expressing various points of view on this issue may be **ordered free of charge from the OCRWM National Information Center at 1-800-225-6972; within Washington, DC, 488-6720.**
4. The videotape titled *The Monitored Retrievable Storage System* may be viewed and discussed to enhance understanding of the various components of the waste management system.