

THE ROLE OF THE MULTI-PURPOSE CANISTER IN THE WASTE MANAGEMENT SYSTEM

Purpose:

This lesson introduces students to the public participation process by involving them as stakeholders in an issue concerning the transportation and storage of nuclear waste. They will consider the effectiveness of the multi-purpose canister (MPC) for safely transporting, storing, and disposing of spent nuclear fuel from nuclear powerplants. This activity can be used as a model for public meetings on other topics.

Concepts:

1. The United States Department of Energy (DOE) is developing methods to reduce risk to the public, employees, and the environment during packaging, handling, storage, transportation, and disposal of spent nuclear fuel from nuclear powerplants.
2. An MPC could be used to store, transport, and dispose of spent nuclear fuel from nuclear powerplants.
3. Public meetings are held by DOE to inform and involve the public in significant issues relating to the waste management program.

Duration of Lesson:

Three 50-minute class periods — depending on students' experience in roleplaying situations
One additional class period may be required to lay out the Special Edition of the *Giventakenne Gazette*

Objectives:

After participating in this lesson, the student will be able to:

1. explain the purpose of the MPC;
2. list the advantages and/or disadvantages of the MPC;
3. identify concerns of stakeholders regarding the use of the MPC;
4. locate pertinent information in reference materials;
5. understand the issues/concerns of several groups holding a stake in the conceptual design of the MPC; and
6. discuss the importance of scientific understanding and communication for all groups involved in technological advances affecting society.

Skills:

Analyzing, communicating, cooperating, group dynamics, roleplaying

Vocabulary:

Cladding, Code of Federal Regulations (CFR), criticality, multi-purpose canister (MPC), Nuclear Regulatory Commission (NRC), overpack, stakeholder

Materials:

Reading Lesson

The Role of the Multi-Purpose Canister in the Waste Management System

Activity Sheets

What Is the Role of the Multi-Purpose Canister in the Waste Management System?

You Are Invited...The Stakeholders Public Meeting

Role Cards

Videotape*

The Multi-Purpose Canister System - 11-1/2 minutes

Blank newspaper master or computer diskette template

The Giventakenne Gazette

Reference Materials*

DOE OCRWM Multi-Purpose Canister System Fact Sheet Series:

Storage of Spent Nuclear Fuel

Transportation of Used Fuel

Nuclear Waste Policy Act and Amendments

The Civilian Radioactive Waste Management System

Radiation

Safety: The Key to Success

Spent Nuclear Fuel

Multi-Purpose Canister System - one or two class sets

*These materials may be ordered, free of charge, by contacting:

**OCRWM National Information Center
600 Maryland Avenue, SW
Suite 760
Washington, DC 20024
1-800-225-6972
(within Washington, DC, 202-488-6720)**

Suggested Procedure:

Day 1

1. Assign the reading lesson *The Role of the Multi-Purpose Canister in the Waste Management System* before your class meets for the first time to discuss the MPC. This is advanced reading that likely covers new information for your students. To guide their reading, distribute the activity worksheet *What is the Role of the Multi-Purpose Canister in the Waste Management System?* and have students complete it as they read.
2. During the first 15 minutes of class, discuss the role of the MPC in the Civilian Radioactive Waste Management System and student responses to *What Is the Role of the Multi-Purpose Canister in the Waste Management System?*
3. After students seem comfortable with the definition and proposed uses of the MPC, introduce the premise of their roleplay. In small groups of two or three, students will take on the roles of stakeholders—that is, interested parties—in the conceptual design and implementation of the MPC.
4. Assign each group of students a role for the Stakeholders Public Meeting by distributing a *Role Card* and a copy of the activity meeting rules *You Are Invited... The Stakeholders Public Meeting*, to each group.
5. Stakeholders fall into four groups—DOE personnel (including a public affairs representative), concerned residents of the community of Giventakenne, staff from the Giventakenne Nuclear Powerplant, and staff from the *Giventakenne Gazette*, the local newspaper. Discuss possible concerns of each stakeholder group.
6. At this point explain your expectations for each stakeholder group. Although the workload for this activity is fairly well distributed among groups, responsibilities vary by stakeholder group.

DOE Personnel — The DOE staff will have the most premeeting preparation. Explain that the technical staff will be evaluated on their presentations during the public meeting and their ability to respond to audience questions.

The DOE public affairs representative will be evaluated on the organization of the public meeting and the summary article prepared for the *Giventakenne Gazette*.

Residents of Giventakenne — Before the public meeting, Giventakenne residents should be preparing a list of questions for the DOE personnel based on the concerns of their role. Each resident may ask up to five questions. Residents should take notes during the public meeting and during the response to their questions. Following the meeting, residents will be writing a letter to the editor (300 - 500 words) of the *Giventakenne Gazette* outlining their concerns and DOE's responses as part of their evaluation.

Staff from the Giventakenne Nuclear Powerplant — The staff from the Giventakenne Nuclear Powerplant will have split responsibilities. The managing official will ask questions and write a letter to the *Giventakenne Gazette* (300-500 words) describing the advantages and disadvantages the MPC might bring the powerplant. The onsite storage expert will be making an official presentation.

Editor and Reporters from the *Giventakenne Gazette* — Before the public meeting, the

Giventakenne Gazette staff should meet to discuss their assignments and deadlines. Reporters should prepare a list of questions to ask at the meeting— up to five questions. After the meeting, reporters will need to write their assigned story (300-500 words).

The editor is responsible for reading and correcting stories from his or her reporters, collecting letters to the editor from Giventakenne residents and powerplant personnel, collecting a meeting summary from the DOE public affairs representative, and composing a short editorial expressing the opinion of the paper (200-300 words).

Day 2

1. Allow student groups to prepare for the Public Meeting roleplay. It might be useful to make the *DOE OCRWM Multi-Purpose Canister System Fact Sheet Series* available for students to use as research tools. For additional resource materials available at no cost, please contact the OCRWM National Information Center at 1-800-225-6972. The Information Center staff can help you identify information products that will meet your research needs.
2. Give students as much time as they need to understand their roles and prepare their presentations and questions. It might be a good idea to spend some time with each group discussing their approaches and questions.
3. Encourage each group to use imagination. Costumes, name tags, and other props will add to the authenticity and fun of the roleplay.

Day 3

1. By the day of the stakeholders public meeting, the DOE public affairs representative should have an agenda completed and ready to share with the class. The representative should also be prepared to time presentations and lead the meeting.
2. Students should bring any props they have prepared to contribute to their roles. They should also bring any charts or graphs they plan to present. The reporters may want to take photographs to support their stories.
3. To begin the meeting, one of DOE's public relations staff should remind the group of the rules.
4. Students who are not making a presentation should take notes. These notes will help them complete their final assignment.
5. After each group has given its presentation and all questions have been answered, have students write their assigned articles, letters to the editor of the *Giventakenne Gazette*, and a *Giventakenne Gazette* editorial.
6. The *Giventakenne Gazette* editor should collect all student assignments and, with the help of the newspaper staff, the editor should lay out, print, and distribute the special Stakeholders Public Meeting Edition of the *Giventakenne Gazette*.
7. Blank master pages, including a front page and additional pages of the *Giventakenne Gazette*, are provided. Students can paste articles, diagrams, and photographs in place to create the

Gazette. A computer diskette with a PageMaker® template for the *Giventakenne Gazette* is available if your students have access to a Macintosh computer equipped with PageMaker® software. Please contact the OCRWM National Information Center to order the diskette.

8. Encourage students to take their copies of the *Giventakenne Gazette* home to discuss the roleplay with their friends and relatives.

Teacher Evaluation of Learner Performance:

Student presentations at the Stakeholders Public Meeting and written contributions to the special edition of the *Giventakenne Gazette* will demonstrate their understanding.