

Nuclear Regulatory Commission Hearing

Regarding Approval
of
Construction and Operation License
for
Atomic Energy Inc.
at Riverwood, WV, USA

The Players:

Neutral:

Atomic Safety Licensing Board (ASLB) Panel of NRC

In Favor:

Representative of Atomic Energy, Inc.
Local Electric Utility
Nuclear Scientist
Climate Change Activist / Environmentalist In Favor

Opposed:

Aquatic Biologist / Environmentalist opposed
Coal Miner
Public Health Commission
Coal Fired Plant Operators

Undecided:

US EPA Representative
Mayor and City Council Member
Residential Consumer
Parents
Financial Institution

Optional Players (if needed)

Representative of US Homeland Security Department
NRC Resident Inspector

Nuclear Energy Debate

Part 1: Research - week 1

- Choose your role
- Meet with group
- Choose position (Pro or con)
- Develop Characters
- Research suggested topics
- Develop powerpoint and presentation statements
- Develop questions for other groups

Part 2: Debate / Hearing- week 2

- All members of group will sit at presenters table
- 1 Representative from each group will testify
(read prepared statement and present their powerpoint)
- Answer questions from panel and audience
- Other groups present / you will ask questions of other groups
- Rebuttal opportunity (2 minutes) (no questions from audience)
- Panel makes their decision / ruling

Part 3: - Debriefing

Letter to CNN

- Discuss if you support or oppose the Panel's ruling
- Still in character
- 100 words minimum 200 words maximum
- email to your teacher:

Mrs. Culp culpj@gardencityschools.com

Survey

- answer survey questions (not in character)
- google survey shared by your teacher

Nuclear Energy Debate

The Place: Riverwood, West Virginia, USA

The Time: Today

The Story: Atomic Energy Inc., a national electric power company, has decided that Riverwood is the perfect place to build a new nuclear power plant. Currently, there is a local power plant that uses coal from the local coal mines. The Mayor and City Council have been approached with the plan.

In order for a nuclear facility to be built, the Atomic Safety Licensing Board (ASLB), part of the U.S. Nuclear Regulatory Commission, must hold a public hearing to allow all interested parties to voice their positions, facts and opinions.

The outcome of this hearing will determine if the Atomic Energy Inc. will be granted a COL (Combined Construction and Operation License). The ASLB panel will run the hearing and approve or deny the license.

Your Job: Each student will sign up with one of the listed special interest groups. Each member will then research the objectives of their group and defend their position (either for or against building the new power plant).

The students within each group work collaboratively to create a cohesive, well rounded committee that represents the group's position. Students will each create their character's background complete with education, job experience, and reasons for their position.

Students will address the topics given specifically to their group, develop a powerpoint presentation and chose a spokesperson to present at the hearing. A minimum of 3 reasons must be presented to support the position. Each reason must be supported by minimum of 3 facts. Data is recommended and preferred.

Presentations must also address an argument that the opposite position groups may bring up. Include facts and data to dispute that argument.

The group must also identify potential questions that others may ask of them. They will list these, along with responses, in their research packet.

The group will develop at least 2 questions for each of the other special interest groups. Each group is required to ask 5 unique questions during the hearing, so they will create and list those questions in their research packet.

Each group will turn in one complete research packet on the first day of the hearing.

Students will prepare a rebuttal statement. After all testimonies have been heard, groups will request time for a rebuttal. This is the time to address problems with your original presentation, answer any questions more completely (that were asked during the original presentation), and generally re-emphasize your position.

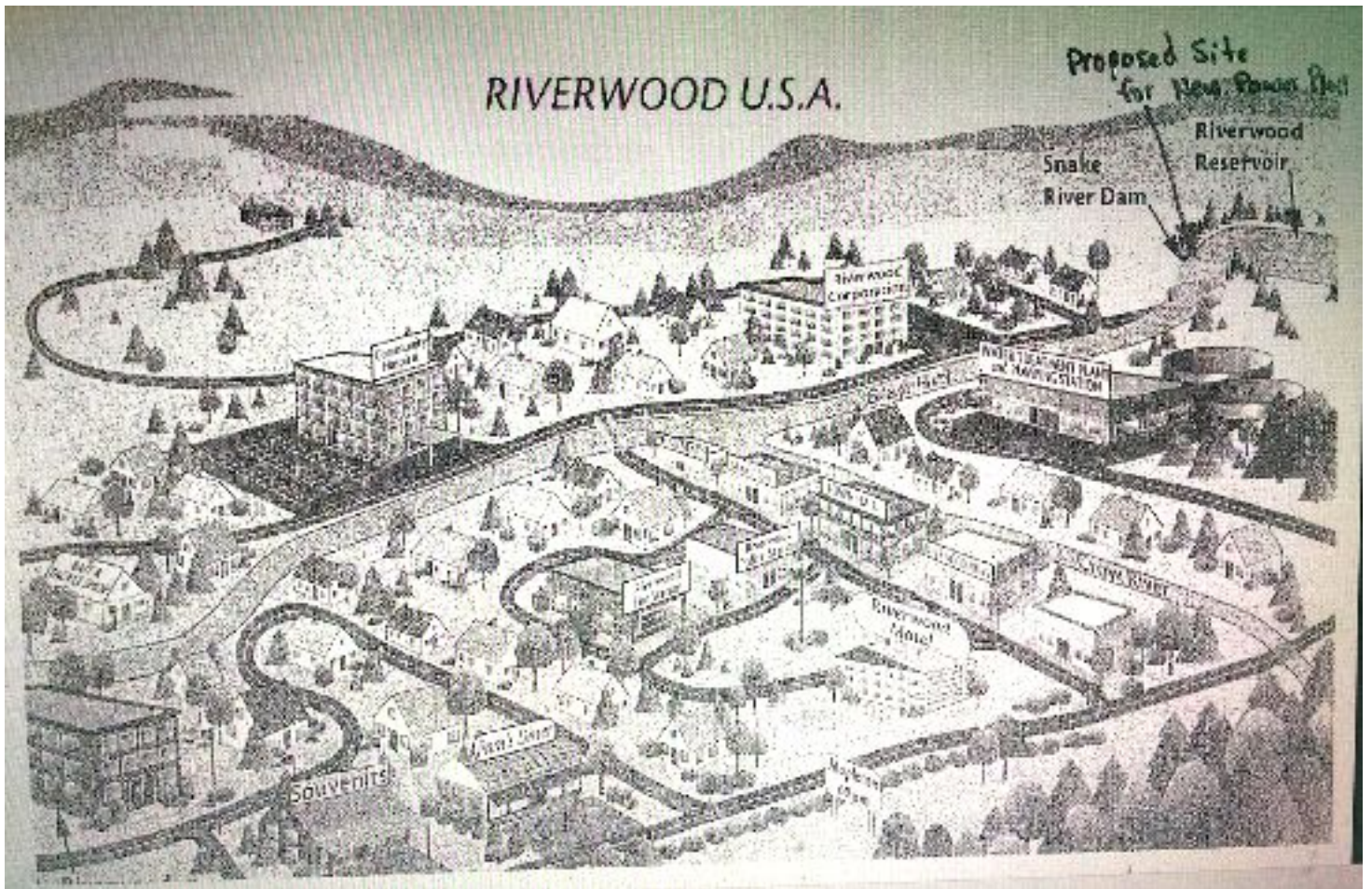
After the Ruling: Each student, remaining in character, will write a short letter to CNN discussing the hearing, the outcome and whether you agree or disagree. The letter should be between 100-150 words.

The final step of this project is to complete a survey. Your teacher will send you a Google Survey. This is not to be completed in character, but from the students' perspective.

CNN letter must be emailed to your teacher.

Culp: culpj@gardenciyschools.com

Extra Credit Opportunities: This is a role-playing activity. get into your roles!!
Dressing in costume, or appropriate clothes, slogans and acting will gain you points!!



The Players:

Atomic Safety Licensing Board (ASLB) Nuclear Regulatory Commission Neutral

Background:

You have been chosen to be a part of an ASLB panel to make a ruling in the COL (Combined Construction and Operating License) submitted to the NRC by Atomic Energy Inc. The panel is composed of administrative judges who are lawyers, engineers and scientists. Each of you will create a biographical description which must include education and experience. Each of you will introduce yourself to the group and state your credentials.

You will be in charge of the hearing.

Your responsibilities include:

- create and post the agenda
- create and post rules of order
- call the meeting to order
- keep accurate time and alert groups
- give introductory presentation about the issue including background information on nuclear energy and why licenses are approved
- call groups to testify
- keep audience in order
- ask questions of each group
- call on audience members to ask questions
- make rulings on appropriateness of comments
- adjourn the meeting
- make any agenda changes

Presentation

1. Each member introduction-include education, job description, experience
2. Describe how nuclear power works and pros and cons associated with it.
3. Describe criteria for approval of COL

Representative of Atomic Energy Inc.
In Favor

Background

You work for Atomic Energy Inc., the electric utility company that has submitted the application. You are an expert in nuclear reactors and will explain types of nuclear reactors and why the site is suitable for the type of reactors proposed.

Presentation

1. Each member introduction-include education, job description, experience.
2. Describe your position on this issue
3. You will need to describe your job
4. You will need to describe the nuclear reactor and how it works.
5. The reactor type has been approved by the NRC but it is your job to explain why the reactor is safe for that site and give examples of safe operation.
6. You must also explain why this type of reactor is appropriate for this facility and how the design will be fitted to the specific site.

Local Electric Utility
In Favor

Background:

You are employed by the local electric utility. You are obligated to provide consumers electricity with the most cost effective energy obtainable. Utilities are subject to federal and state legislative and regulatory requirements. Research jobs at an electric utility and applicable laws and regulations.

Presentation

1. Each member introduction-include education, job description, experience
2. Describe your position on this issue
3. You will need to provide data such as operation costs, environmental impact and safety concerns to defend your position
4. Remember, your company is the local link between Atomic Energy Inc and the local consumers.

Nuclear Scientist
In Favor

Background

You are a nuclear scientist and are enthusiast for advancing nuclear energy. You are in favor of new nuclear power plant constructions.

Presentation

1. Each member introduction-include education, job description, experience.
2. Describe your position on this issue
3. You will need to describe your job
4. Describe how a nuclear power plant works.
5. You will need to describe the benefits of nuclear energy and explain why you are in favor of the construction.

Climate Change Activist / Environmentalist **In Favor**

Background

You are in favor of nuclear energy as a non-CO₂ energy source. You will need to know how CO₂ adds to climate change and where it comes from.

Presentation

1. Each member introduction-include education, job description, experience
2. Describe your position on this issue
3. You will need to understand how a nuclear power plant differs from a fossil fuel plant.
4. You will need to explain climate change and the effect it is having on the planet.
5. You will need to explain the benefits of nuclear power over climate change

Aquatic Biologist / Environmentalist **Opposed**

Background:

You are employed as a biologist / environmentalist. You are concerned for the wildlife, forests and aquatic environments of the world. You study impacts on local environments and animal populations. Perhaps you work for Greenpeace / World Wildlife Fund / The Sierra Club / Audubon Society or another concerned group.

Presentation

1. Each member introduction-include education, job description, experience
2. Describe your position on this issue
3. You will explain your group and what they stand fo
4. What does your group do and what is your job?
5. What is an environmental impact statement?
6. You need to describe the impact a nuclear power plant will have on the environment and animal populations as compared to coal power plant.
7. You will need to give examples of problems that have occurred

Coal Miner **Opposed**

Background

You are a coal miner and are concerned for you job security. You live in a state that has been known for coal production and you are worried about your future.

Presentation

1. Each member introduction-include education, job description, experience.
2. Describe your position on this issue
3. Describe your job as a coal worker.
4. Describe how a coal fired plant works and how it is essential to the economy.
5. Describe the effects of closing or reducing the coal power plant.

Public Health Commission **Opposed**

Background:

You are employed by the Public Health Commission. You are concerned about how nuclear plant emissions and nuclear waste will affect the health of all people.

Presentation

1. Each member introduction-include education, job description, experience.
2. Describe your position on this issue
3. Describe your job in public health / what do public health workers do?
4. What are the health effects of nuclear emissions and nuclear waste?
5. What kind of medical care will be needed?
6. What kind of costs are expected for this medical treatment?

Coal-Fired Plant Operators **Opposed**

Background

You work in a coal fired electricity facility and are concerned for your job security. You live in a state that has been known for coal production and because of governmental regulations to reduce greenhouse emissions you are worried about your future.

Presentation

1. Each member introduction-include education, job description, experience.
2. Describe your position on this issue
3. Describe your job as a in a coal powered generating station.
4. Describe how a coal fired plant works and how it is different from a nuclear plant.
5. Explain problems with a nuclear plant.

US Environmental Protection Agency (EPA) Representatives **Undecided**

Background

You work for the EPA as an environmental scientist. You are responsible for approving any environmental impact of the new plant. Your new EPA Director under the current president does not share traditional beliefs of the EPA of the past. You must determine the EPA's position on this issue.

Presentation

1. Each member introduction-include education, job description, experience.
2. Describe your position on this issue
3. What does the EPA do? describe your job at the EPA.
4. What is an environmental impact statement?
5. Explain how, according to the environmental impact statement, construction and operation will impact the environment.
6. You must explain the positive and negative aspects of nuclear power and if it is better than fossil fuel.

Mayor and City Council Members **Undecided**

Background

You and a city council member has been invited to speak at the ASLB Panel. As a mayor and city council member of a small community you want to improve business options and way of life. You want to reduce taxes yet provide resources the citizens want. You see the construction of the nuclear plant as a possible what to create jobs and a solution to many serious budget problems, but are concerned with the many issues you have heard on the news about nuclear power plants.

Presentation

1. Each member introduction-include education, job description, experience.
2. Describe your position on this issue
3. Describe your community, providing a community profile and demographics.
4. Describe your job and explain how the plant will affect the community. For example, projected number of jobs and tax implications.
5. You will also need to describe any negative issues with the construction and how it could affect the community.

Residential Consumer **Undecided**

Background:

You live 30 miles from the proposed nuclear power plant. You want cheap electricity and do not want to pay higher rates. You are must decide if the nuclear power plant will charge you less than the coal plant. You do have social, environmental and health concerns also.

Presentation

1. Each member introduction-include education, job description, background.
2. Describe your position on this issue
3. Discuss economic issues that concern you (Is nuclear power more cost efficient / jobs)
 - a. You need to know the cost of electricity in the area.
 - b. The change in cost if a nuclear plant is built.
4. Discuss social, environmental and health issues that concern you.
5. You may explore alternative fuel / power resources.

Parent **Undecided**

Background

You are a resident of Riverwood, and a concerned parent. You are worried about the health risks your children are exposed to with both coal and nuclear energy.

Presentation

1. Each member introduction-include education, job description, age, residence and family.
2. Describe your position on this issue
3. You need to research the effects of nuclear energy. Share the health risks associated with exposure to radiation as well as coal pollution
4. Describe plant safety, previous accidents and associated health issues for both coal and nuclear plants.
5. You may explore alternative fuel / power resources.

Financial Institution Representatives **Undecided**

Background

You represent the financial institution (“Bank”) that Atomic Energy Inc., will be borrowing money from in order to finance the new nuclear facility. You are to determine if the financing for the construction of the plant is feasible. You will need to explain the projected cost and if it is feasible.

Presentation

1. Each member introduction-include education, job description, experience.
2. Describe your position on this issue.
3. Explain what the economics of nuclear power depend on.
4. Explain generation cost vs construction cost when determining the feasibility.
5. Explain costs and benefits to local communities.
6. Keep in mind the benefit / risk to your institution and shareholders.

US Homeland Security Department Representatives **Undecided**

Background

Since 9/11 US Homeland Security has been responsible for protection from terrorist attack and remedial actions necessary as the result of a terror attack. The Department of Homeland Security is designated as the Sector-Specific Agency for the Nuclear Reactors, Materials, and Waste Sector.

Presentation

1. Each member introduction-include education, job description, experience.
2. Describe your position on this issue
3. Describe the role of US Homeland Security in the operation of nuclear power plants. Describe your role within the organization.
4. Describe areas of concern when protecting nuclear power plants
5. Make a recommendation to approve or deny the COL.

NRC Resident Inspector **In Favor**

Background:

You provide oversight for the safe construction and operation of the nuclear power plant. Every plant has two trained individuals that observe the plant operation and safety. You will be an employee of Atomic Energy Inc, but report to the NRC. You and your family will move to Riverwood and live in the community where your assignment is located.

Presentation

1. Each member introduction-include education, job description, experience.
2. Describe your position on this issue
3. Describe training required to be an NCR inspector
4. You will need to describe your job, what you do, what you look for.
5. You will need to discuss problems you have encountered at plants and how they have been solved.

SAMPLE

Name _____

Group _____ **Hour** _____

Nuclear Debate Survey

Please answer these questions as yourself, not your role.

1. What was the panel's decision?

2. Do you agree with their decision based on the facts presented?

3. Please rate the panel, 1-10, 10 being the best. Explain why.

4. Which group(s) do you feel did the best? (rate 1-10, 10 being the best)

5. Which group(s) do you feel did poorly?(rate 1-10, 10 being the best)

6. Did you like this activity? Why or why not?

7. List the names of your team members. Give each a grade for the project. (Include yourself.)
Explain why you gave them and yourself this grade. Be specific! Be honest!

8. How can we improve this activity? Be HONEST!

Nuclear Energy Debate Worksheet

Hour _____

Special Interest Group: _____

Group Members: _____

Position on Nuclear Energy: _____

Character Development:

1. _____

2. _____

3. _____

4. _____

Position Statement: A minimum of 3 reasons must be presented to support your position.
Each reason must be supported by minimum of 3 facts.
Scientifically supported data is recommended and preferred.

Position Statement: _____

Reason 1: _____

Reason 2: _____

Reason 3: _____

Questions for Other Groups

ASLB Panel of the NRC

Question 1 _____

Question 2 _____

Atomic Energy, Inc.

Question 1 _____

Question 2 _____

Local Electric Utility

Question 1 _____

Question 2 _____

Nuclear Scientists

Question 1 _____

Question 2 _____

Climate Change Activist / Environmentalist

Question 1 _____

Question 2 _____

Aquatic Biologist / Environmentalist

Question 1 _____

Question 2 _____

Coal Miner

Question 1 _____

Question 2 _____

Public Health Commission

Question 1 _____

Question 2 _____

Plant Operators - Coal Fired Plant

Question 1 _____

Question 2 _____

US EPA Representative

Question 1 _____

Question 2 _____

Mayor and City Council Member

Question 1 _____

Question 2 _____

Residential Consumer

Question 1 _____

Question 2 _____

Parents

Question 1 _____

Question 2 _____

Financial Institution

Question 1 _____

Question 2 _____

US Homeland Security Representatives

Question 1 _____

Question 2 _____

NRC Resident Inspectors

Question 1 _____

Question 2 _____

Possible Questions:

A prepared presentation anticipates what questions the ASLB and audience will ask of your group.
How will you respond? Predict and respond to at least 4 possible questions.

Possible Questions / Responses:

1. _____

2. _____

3. _____

4. _____

Nuclear Hearing Sign up Sheet

Nuclear Regulatory Commission
Atomic Safety Licensing Board
Neutral

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

Atomic Energy, Inc.
Representative
In Favor

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

Local Electric Utility In Favor

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

Nuclear Scientists In Favor

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

Climate Change Activist / Environmentalist
In Favor

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

Aquatic Biologist / Environmentalist
Opposed

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

Coal Miner Opposed

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

Public Health Commission
Opposed

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

Plant Operator
Coal-Fired Power Plant
Opposed

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

US EPA Representatives
Undecided

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

Mayor and City Council Member
Undecided

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

Residential Consumer Undecided

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

Parents Undecided

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

Financial Institution Undecided

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

US Homeland Security Department
Representatives
Undecided

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.

Nuclear Hearing Sign up Sheet

NRC Resident Inspector In Favor

1st Hour

- 1.
- 2.
- 3.
- 4.

4th Hour

- 1.
- 2.
- 3.

2nd Hour

- 1.
- 2.
- 3.
- 4.

5th Hour

- 1.
- 2.
- 3.

3rd Hour

- 1.
- 2.
- 3.

6th Hour

- 1.
- 2.
- 3.
- 4.