

15.4 Discussion

Is Nuclear Energy Really Safe?

In this unit, we learned about radioactivity and its related reactions and equations. We learned that radioactive decay occurs naturally and that we are daily exposed to it. Although radiation is known to be a health hazard for humans, natural radioactive decay takes a considerable amount of time, as we learned in the half-life lesson, and the amount of radiation we are exposed to is not considered to be at a dangerous level. We also learned about artificial nuclear reactions that produce useful energies that efficiently replace toxic carbon-loaded energy. However, nuclear reactions also produce more radioactive particles. Man-made nuclear reaction is much more rapid compared to natural radioactive decay. There are peaceful and destructive applications of nuclear energy in our society.

So then, the following questions naturally arise: Is nuclear energy really peaceful? Is nuclear energy safe?

What do you think?

For this assignment, you are asked to conduct online research on fission and fusion technologies to become more informed. When you complete your research, you will visit a discussion board and take a stance about whether you believe nuclear energy is safe or not safe.

Please follow these steps and instructions:

Task 1

Conduct online research on fission and fusion. Find out facts about the topics listed below by taking notes on this "[15.4 Fission & Fusion Research Organizer](#)":

1. Difference between fission and fusion
2. Pros and cons of fission technology
3. Real-life application examples of fission technology
4. Pros and cons of fusion technology
5. Real-life application examples of fusion technology
6. Health effects of man-made radioactive materials
7. Recent events that represent the pros or cons of fission and fusion technologies
8. Future implications of fission and fusion technologies
9. Anything else about fission and fusion that interests you

Task 2

Think about your research findings and think about whether you believe nuclear energy is safe and peaceful to human. Remember, you need to make your decision based on the following points:

1. You cannot be neutral. You can take only one side; either you believe it is safe or you believe it is unsafe.
2. Your decision must be made based on your research findings.

Task 3

Be prepared to make a persuasive argument based on your stance. Organize the information to support your argument by reviewing the "[15.4 Fission & Fusion Research Organizer](#)."

1. Which piece of information best supports your argument?
2. Which information has more credibility to appeal to the audiences?
3. Do you have the exact lines you want to cite?
4. Do you have the source of the information you want to share?

Task 4

Come to the discussion board titled "15.4 Is Nuclear Energy Really Safe?" and create a thread to share your argument. Plan your posting so that it is not too lengthy. Because this is an online discussion, in order to have your thoughts read and understood, it is best to avoid making a lengthy post. Try writing your arguments within 2-3 paragraphs. In your post, please include the following items for full credit:

- Begin your argument with your claim; either you believe nuclear energy is safe or you believe it is not safe.
- Remain objective, neutral, and accurate throughout your post.
- Clearly state why you believe so by providing supporting evidence from your online research.
 - Use quotation marks if you use words and sentences directly from an online information site. You can also use paraphrasing, summarizing, and generalizing methods.
 - Cite the information source by linking to the works cited section. Learn how to cite appropriately in [this document](#).
- Clearly state why you think the counterclaim is incorrect by pointing out the facts:
 - Use quotation marks if you use words and sentences directly from an online information site.
 - Cite the information source by linking to the source.
- Use connecting words to help the audience to see the relationships between your statements, such as "therefore," "however," "in addition to," and "for example."
- End your argument with a concluding statement (i.e. "This is why I believe the nuclear technology is not safe for us human beings").

Task 5

Read some of your classmates' arguments and respond kindly to at least two of them. If practical, select one from the ones that share the same claim as yours and one from the counterclaims. Your feedback must be in complete sentences with proper netiquette, and remember to remain objective, neutral, and accurate throughout your post.

Think about the following points when you share your feedback:

- When responding to the posts that have the same claim as yours,
 1. What similarities and differences do their arguments have?
 2. Are there any new pieces of information you did not know?
 3. Is there anything in the post that interests you, inspires you, or surprises you?
 4. Are there any ways you can support his/her claim or advice?
 5. Do any of the posts make you wonder or want to know more? What are your questions?

- When responding to posts that express counterclaims (a claim that is opposed to your claim),
 1. Are there any new pieces of information you did not know?
 2. Is there anything in the post that interests you, inspires you, or surprises you?
 3. Do their findings and claims persuade you change your stance?
 4. Do any of the posts makes you wonder or want to know more? What are your questions?
 5. Do their arguments or claims need more clarification? What are they?
 6. Do their arguments or claims sound fair and accurate? If not, politely point out and correct them with relevant supporting evidence (resources).