FUKUSHIMA HIGH SCHOOL ACADEMY 2025

Supplementary reader: report on activities from August 5 to September 15, 2025

High school students investigated the issues in Switzerland, Aomori and Fukushima!

Challenges and Recommendations regarding the Final Disposal of High-Level Radioactive Waste

Look! Listen! Learn!
Sustaining Interest in Social Issues

Fukushima High School Academy 2025

Purpose of the Training Program

The purpose of the training program is to increase participants' sense of ownership by making social issues "about oneself," and to develop empathy, cooperation skills, self-expression, and respect for diverse opinions. Through this, we aim to disseminate information on the issues at hand, and the importance of revitalizing Fukushima, both nationally and internationally.

Three areas of the Training Program

① Investigate technologies and policies related to the final disposal of high-level radioactive waste by examining the current situation and future prospects in two regions: Japan and Switzerland

② Communicate the current situation in Japan (Fukushima Prefecture) to people in Switzerland

③ Bring back knowledge from Switzerland, consider approaches to final disposal in Japan, and share these insights nationwide and globally

※ This activity report has been compiled based on the on-site training conducted in August and the reporting session held at J-Village in Fukushima Prefecture on September 15.

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Participants List

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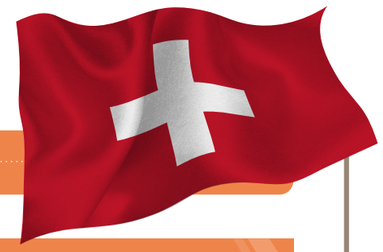
Pursuing the Issue of Nuclear Waste Disposal in Switzerland, Aomori and Fukushima!



Fukushima/Aomori Program

■ August 6 (Wednesday)
Fukushima Prefecture

Preceding Day (August 5): Group Assembly at the Happy Road Net Office

・Visit to the Tokyo Electric Power Company (TEPCO) Decommissioning Archive Center

・Lecture by Mr. Akira Ono, Vice President of TEPCO, at Fukushima Daiichi Nuclear Power Station

・On-site tour (Unit 5 Spent Fuel Pool, Blue Deck, Green Deck, etc.)

Aomori Prefecture – Overnight stay at Aomori Nuclear Fuel Technology Center

■ August 7 (Thursday)
Aomori Prefecture – Rokkasho Village

・Visit to the Japan Nuclear Fuel Limited (JNFL) Public Relations Center in Rokkasho

・Lecture by Mr. Naohiro Masuda, President of JNFL

・Facility tour of JNFL sites (including the Vitrified Waste Storage Facility and Spent Fuel Storage Pool)

Hatago Inn Fukushima Hirono, Hirono Town

■ August 8 (Friday)
Fukushima Prefecture

・Lecture: Overview of Japan's Energy Policy, Geological Disposal and Switzerland's Initiatives

・Preparation for Presentations

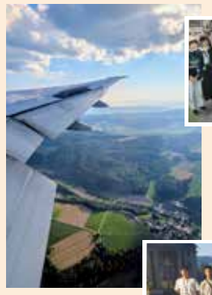
Hatago Inn Fukushima Hirono, Hirono Town

Switzerland Program

■ August 10 (Sunday)
Travel to Switzerland

Previous Day: Transfer by chartered bus from Hirono Town to Hotel Nikko Narita, Chiba Prefecture

・Flight from Narita Airport to Zurich Airport, Switzerland



Overnight Stay: Bern

■ August 11 (Monday)
Guttannen / Meiringen

・Visit to the Grimsel Test Site

・Late lunch around Meiringen Station

Overnight Stay: Bern

■ August 12 (Tuesday)
Mühleberg / Ittigen

・Visit to the Mühleberg Nuclear Power Plant

・Study session at the Swiss Federal Office of Energy

Overnight Stay: Bern

■ August 13 (Wednesday)
Baden / Wettingen

・Exchange with Nagra staff

・Visit to the proposed final disposal site in Stadel

Overnight Stay: Regensdorf

■ August 14 (Thursday)
Würenlingen

・Visit to the Zwilag Interim Storage Facility

・Exchange with young professionals at the Paul Scherrer Institute

Overnight Stay: Regensdorf

■ August 15 (Friday)
Zurich

・Review of site visits

・City sightseeing

August 16: Departure from Zurich Airport for return to Japan
August 17 (morning, Japan time): Arrival at Narita Airport

Part I

Presentation by the Training Overview Group

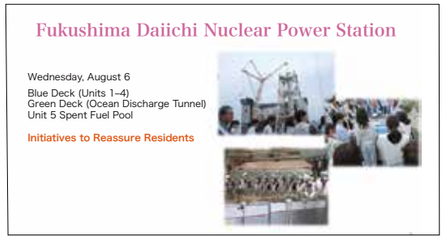
Current Status and Challenges regarding Final Disposal

High School Student Presenters

Misa Sakuyama, Futaba Future High School
Azusa Ozaki, Institute of Science Tokyo High School
Hinata Sato, Haramachi High School
Nina Maruyama, Waseda Saga High School

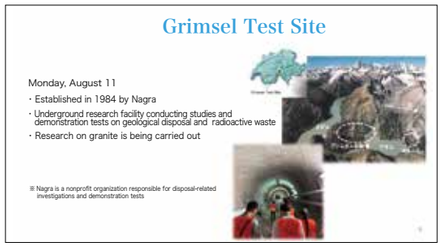
What comes to mind when you hear "Switzerland?"
"Cheese?" "Chocolate?" "Heidi?"
For us, what first comes to mind is tough memories - like doing push-ups as a penalty for being late, or giving presentations in unfamiliar English. In this training program, we visited sites both in Japan and Switzerland to learn about the current status of, and efforts surrounding, nuclear waste final disposal. Here, we present an overview of the training.

In Japan, on August 6, we visited the TEPCO Decommissioning Archive Center in Fukushima Prefecture, together with the Fukushima Daiichi Nuclear Power Station. On August 7, we toured Japan Nuclear Fuel Limited (JNFL) and its PR Center in Aomori Prefecture. Next, on August 8, we attended lectures covering topics such as Japan's energy policies and an overview of geological disposal.
At the Fukushima Daiichi Nuclear Power Station, we stood on the Green Deck and heard from TEPCO Vice President Akira Ono about the release of treated water into the ocean. During the visit to Unit 5's spent fuel pool, we wore protective gear and were able to access areas that are normally off-limits to visitors. From the Blue Deck, we observed the current status of the cover installations at Units 1, 3 and 4. We also learned about the measures being taken to prevent the spread of radioactive materials and the efforts to reassure local residents.



At JNFL, we learned about the methods of nuclear fuel reprocessing and toured facilities such as the vitrified waste storage facility and the spent fuel pool.
We also had a memorable lecture from Naohiro Masuda, president of JNFL, who served as the superintendent of Fukushima Daini Nuclear Power Station during the Great East Japan Earthquake. He spoke about the response efforts following the disaster.
At both the Fukushima Daiichi Nuclear Power Station and JNFL, we engaged in conversations over lunch with staff members. It was a valuable experience to hear directly from those working on the front lines - their honest thoughts and the challenges they face.

In Switzerland, on August 11, we visited the Grimsel Test Site. On August 12, we visited the Swiss Federal Office of Energy and toured the Mühleberg Nuclear Power Plant. On August 13, we interacted with staff from Nagra (National Cooperative for the Disposal of Radioactive Waste, which is responsible for implementing radioactive waste management in Switzerland) and visited a proposed final disposal site. And on August 14, we toured the Zwilag interim storage facility.
The Grimsel Test Site, established in 1984, is an underground research facility dedicated to research and testing related to geological disposal and radioactive waste. The site conducts its work in collaboration with both domestic and international organizations.



The Mühleberg Nuclear Power Plant was decommissioned following the Fukushima Daiichi Nuclear Power Station Accident. In 2019, Switzerland began its first decommissioning project. The removal of spent fuel was completed in 2023 and, during our visit, we were able to tour the facility without any protective gear.

The interim storage facility receives and stores all radioactive waste generated in Switzerland. In the past, Switzerland outsourced vitrification processing to other countries, so high-level radioactive waste is stored in a dry state as both spent fuel and vitrified waste.

Through this training program, we were able to understand safety through data and gain a sense of reassurance by visiting actual facilities. In Switzerland, experts and local residents actively engage in discussions about final disposal and we felt that people in Japan should also take a greater interest in the issue.
It is said that young Japanese show little concern for this topic and we saw a need to reconsider the way information is presented.

Two groups will now give presentations. The Policy Design Group will focus on the delays in NUMO's (Nuclear Waste Management Organization of Japan) final disposal project. They will propose ways to accelerate the process while ensuring consensus among local residents. The Interest and Engagement Group will present proposals aimed at encouraging younger generations to take an interest in geological disposal. Their proposals are based on three key perspectives: education, dialogue and information dissemination.
The first of these stresses the importance of learning about energy and nuclear power in compulsory education. The second concerns lowering the barriers to understanding the issue of geological disposal. And the third involves expanding community-based dialogue and exchanges.
We hope you will enjoy the presentations from each group.

Part I

Presentation by the Policy Design Group

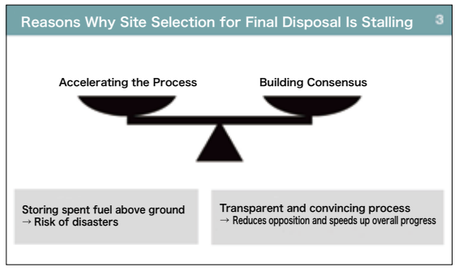
(Challenges and Proposals regarding Geological Disposal of High-Level Radioactive Waste)

High School Student Presenters

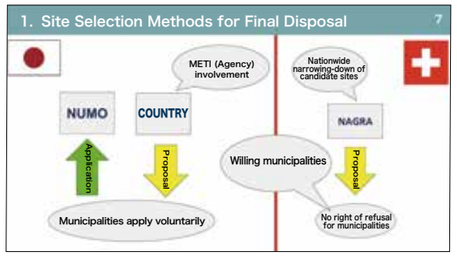
Yume Watanabe, Iwaki Sakuragaoka High School
Naoki Akiyama, Midorioka High School, Ibaraki Prefecture
Riku Tada, Haramachi High School
Shion Aoki, Waseda Saga High School
Sota Itakura, Sapporo Kosei High School
Ryo Hashimoto, Futaba Future High School

It has been 25 years since the establishment of the Nuclear Waste Management Organization of Japan (NUMO), the entity responsible for implementing the final disposal project for high-level radioactive waste. Compared to the original plans, the geological disposal project has experienced significant delays. While the project was expected by now to have progressed to the third stage, detailed investigation, it remains at the first stage, literature survey.
In light of this situation, we believe there are issues with the current approach. This presentation will outline the challenges surrounding geological disposal and propose solutions for moving forward.

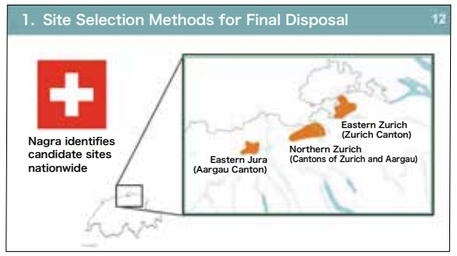
One of the main reasons for the difficulty in selecting a disposal site is the challenge in balancing the need for a "speedy process" with that of "building consensus among local residents". However, if a transparent process that is acceptable to residents can be established, this may lead to more efficient progress. To address this issue, we propose the following three measures. One: shifting to a request-based selection method. Two: improving the site selection process. Three: introducing "Shin-Taiwa no Ba" (new dialogue framework).



In terms of the first measure - shifting to a request-based selection method - Japan currently employs two approaches: a public application system, where municipalities voluntarily apply to NUMO for surveys; and a request-based system, where the government proposes surveys to municipalities. The request-based system is passive, targeting municipalities that have already shown some willingness to participate in the process.



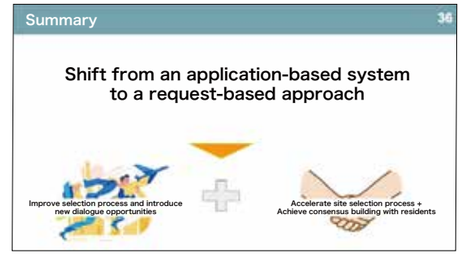
Switzerland also employs a request-based system; however, it begins by narrowing down potential candidate sites. As a result, even though Switzerland initiated its selection process later than Japan, it has already determined its planned disposal site. We propose adopting a system similar to the Swiss approach. It is important to note, however, that in Switzerland, some residents living within the designated surface facility areas were unaware that their homes were included until the decision was finalized. Therefore, rather than implementing the Swiss system in its entirety, we suggest incorporating its strength - the method of narrowing down suitable candidate sites – while ensuring transparency and public awareness throughout the process.



The second measure involves improving the site selection process. Japan's site selection process consists of three stages: literature survey, overview survey and detailed investigation.
Between each stage, there is a period for gathering local opinions. However, since no deadlines are set for such periods, it is difficult to predict the overall timeline.
Literature surveys are currently being conducted in three municipalities. If, for instance, residents agree to proceed to the overview survey and subsequently to the detailed investigation, we propose simplifying the opinion-gathering process at that point. Reviewing the process would enable a more flexible approach and allow the inclusion of alternative options.

To avoid prolonged discussions and provide greater clarity, we propose the introduction of local referendums. In Kamoenai Village, Hokkaido, discussions about advancing to the overview survey continue, but with no clear outlook. We are also concerned that consultation sessions alone may not adequately capture the views of all residents. By implementing legal referendums, the process could be standardized nationwide.
The third measure is the implementation of a new dialogue framework aimed at fostering consensus among residents. In Japanese, we term this "Shin-Taiwa no Ba". Currently, in municipalities where literature surveys are being conducted and nationwide consultation sessions are held, there are opportunities to explain the details and progress concerning geological disposal. However, it is rare for residents' opinions to be reflected in actual policy decisions.
The "Shin-Taiwa no Ba" initiative would establish a system in which residents' views are actively incorporated into the decision-making process. Rather than one-way communication, it would promote collaboration between NUMO and local communities to develop concrete plans together. Additionally, measures would be taken to ensure that individuals who are opposed to, or neutral toward, the plans feel reassured and comfortable participating.

By implementing these three measures, we believe it is possible to speed up the selection process and achieve consensus among residents, thereby improving the current stagnation in Japan's geological disposal efforts.



Part I

Presentation by the Interest and Engagement Group

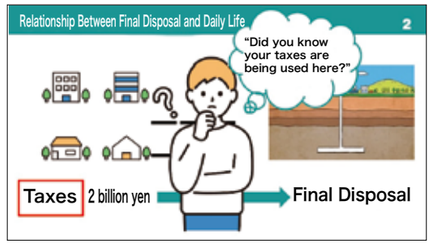
How Can We Foster Interest and Engagement regarding Final Disposal?

High School Student Presenters

Kiyoshi Nakatsugawa, Soma High School
Hana Ogihara, Institute of Science Tokyo High School
Atsuki Miyakawa, Iwaki High School
Ai Sato, Iwaki Sakuragaoka High School
Kenta Kikuchi, Iwaki Sakuragaoka High School

In order to address the challenges associated with the final disposal of high-level radioactive waste, we will now present our thoughts on: "How can we encourage people to take an interest in final disposal?"

First, we ask you to consider whether you believe there is a connection between your everyday life and final disposal. As an example, to highlight taxation, subsidies are granted to municipalities that express a willingness to undergo the selection process for a disposal site. Despite this, we think it is likely that many citizens do not feel a direct connection to the issue of final disposal.



Before we actually arrive at the full-scale implementation stage for final disposal, it is crucial to foster interest and engagement among today's younger generation, as it is they who will become the future leaders of society. To bring such younger people on board, it is necessary to reconsider current methods of information dissemination, dialogue activities and education. In this context, we present concrete proposals for communicating the issue of final disposal effectively.

First, let us consider the issue of information dissemination. The Nuclear Waste Management Organization of Japan (NUMO) is responsible for implementing the final disposal project and it posts about its activities on social media platforms such as YouTube and Instagram. However, we found that there was a lack of content that sparks interest. We hope to see greater efforts directed toward delivering information that resonates with younger individuals who may currently be indifferent to the issue.

We therefore propose the use of anime as a medium for information dissemination. By creating anime that enables viewers to "learn through enjoyment", it may be possible to generate greater interest in final disposal among younger audiences.

Next, we would like to address the need to improve dialogue activities. One issue with NUMO's nationwide consultation sessions is the low participation rate among younger generations. Young people tend to search the internet immediately whenever they have questions or face uncertainties and many are not accustomed to attending physical venues for such events. We therefore believe it is necessary to create new forms of dialogue that better align with their lifestyles and preferences.

To address this, we propose an online chat function named "GUMO Chat", inspired by NUMO's mascot character, GUMO. By enabling users to casually exchange questions and opinions at any time via the internet, such a service could help deepen public understanding and engagement regarding the issue of final disposal.

We also have proposals regarding educational activities for the younger generation. First and foremost is the continuation of existing initiatives. Currently, the Agency for Natural Resources and Energy under the Ministry of Economy, Trade and Industry supports activities led by university students aimed at promoting understanding among their peers, as well as programs such as the "Fukushima High School Academy", where high school students learn about final disposal.

This training program has provided participants with a deep understanding of final disposal and we sincerely hope that such initiatives will continue to receive support. We also propose expanding this program nationwide. Many participants who initially had no interest in the topic have since developed a genuine curiosity and concern. By implementing this program across the country, we believe it can effectively foster interest and engagement among the younger generation. It is important for young people to develop this interest and engagement, but we feel that current methods are not conducive to promoting this. For the sake of Japan's future, we hope the government and NUMO will put even more effort into their activities. We too want to take on this challenge together with them.

Part II Panel Discussion

Education on Radiation and Nuclear Power

● Coordinator

Masaharu Tsubokura, Professor and Chair, Department of Radiation Health Management, Fukushima Medical University

● High School Student Panelists

Atsuki Miyakawa, Second-year student, Iwaki High School
Yume Watanabe, Second-year student, Iwaki Sakuragaoka High School
Naoki Akiyama, Second-year student, Midorioka High School, Ibaraki Prefecture
Hana Ogihara, Second-year student, Institute of Science Tokyo High School

Tsubokura
First, let us reflect on the presentations made by your groups. Please share the points that left the strongest impression on you during your visits to various locations in Japan and Switzerland.

Akiyama
What left the strongest impression on me was the difference in the sense of values between Japan and Switzerland regarding nuclear facilities. For example, in Japan, we toured the facilities wearing protective clothing, whereas in Switzerland, we wore ordinary attire. I felt this clearly reflected a difference in approach.

Naoki Akiyama

Tsubokura
Would it be fair to say that Switzerland is not excessively strict in this regard?

Miyakawa
One of the most memorable experiences for me was visiting the Japan Nuclear Fuel Limited (JNFL) facility in Aomori Prefecture. We were given a lecture by the company’s president, Mr. Naohiro Masuda, who was the superintendent of TEPCO’s Fukushima Daini Nuclear Power Station at the time of the Great East Japan Earthquake. What left an impression on me were the stories about the actual actions taken by those who were working on-site during the disaster - details that only someone who was there could share.

Atsuki Miyakawa

Tsubokura
Miyakawa-san, you are from Iwaki City, correct? Living in the Hamadori region, I assume you already have a certain level of knowledge. What aspects surprised you the most?

Miyakawa
I had already heard about radiation and related topics from school and my parents. However, most of what I knew was factual, and I did not fully understand the detailed circumstances during the disaster. What left a strong impression on me during Mr. Masuda’s lecture was hearing about those on the front lines at the time - how they acted, what instructions they gave to others, and how they worked to prevent an accident.

Watanabe
What left the deepest impression on me was the need for urgency regarding the issue of final disposal, which our generation must address. I was surprised because I had no prior knowledge about final disposal at all.


Yume Watanabe

Tsubokura
At what point did you feel that sense of urgency?

Watanabe
It was during my visit to the High-Level Radioactive Waste Storage and Management Center in Rokkasho Village, Aomori Prefecture. I learned that in Japan, the selection process for the final disposal site is still at the literature review stage, and that the actual location has not yet been decided. This realization heightened my sense of urgency.

Ogihara
What struck me the most was the difference in the concepts of “safety” and “peace of mind” between Japan and Switzerland. In Japan, the final disposal process involves repeated efforts to build consensus with local communities. In contrast, Switzerland prioritizes safety from a geological perspective and narrows down multiple candidate sites for final disposal accordingly.


Hana Ogihara

Tsubokura
The high school students have shared several opinions on how the selection process for the final disposal site should proceed. Their comparisons between Japan and Switzerland raised two main perspectives: one suggesting that Japan’s process is overly meticulous and that it should transition to the Swiss approach, and another supporting the current method as it is. I would like to ask the Policy Design Group to tell us what kind of discussions took place.

Watanabe
It is not about ignoring the opinions of local residents: responding carefully to each concern is important. However, there was debate about the fact that being overly cautious - essentially “overchecking every detail” - is causing significant delays in decision-making.

Akiyama
Ultimately, our group concluded that simplifying the process would be preferable.

Tsubokura
Ogihara-san and Miyakawa-san: you’re not part of the Policy Design Group, but what are your thoughts?

Ogihara
I believe Japan’s careful approach is not necessarily a bad thing. However, compared to Switzerland, Japan seems to be putting significant effort into ensuring reassurance and addressing opposition.

Miyakawa
Switzerland’s approach, where the government first narrows down candidate sites, appears to be much faster. However, if this system were introduced in Japan, I suspect it would trigger strong opposition, so the current process may be unavoidable. On the other hand, since it takes so much time, I also think measures to accelerate progress significantly are necessary.

Tsubokura
I also work in Fukushima, where prioritizing careful engagement with local residents is of utmost importance. I too have found it difficult to engage in discussions that might compromise residents’ interests. Even among the four of us, there are subtle differences in opinion. Despite this, the Policy

Design Group ultimately reached a consensus, so could you explain how your discussions went?

Akiyama
In our discussions, we concluded that modifying the selection process to incorporate residents’ opinions at an earlier stage could make the identification of candidate sites proceed more smoothly.

Watanabe
There was also discussion about the importance of NUMO, as the implementing body, engaging in concrete dialogue with residents in advance. For example, addressing how to respond if reputational damage occurs and establishing solutions or improvement measures beforehand.

Tsubokura
The high school students have reached a point where they understand the site selection process and can even express opinions on how it should be improved. Rather than focusing on whether their opinions are right or wrong, I hope you can appreciate how they have grown. Next, let us move on to the topic of information dissemination and dialogue. The Interest and Engagement Group emphasized the importance of communication strategies that focus on young people. Could you explain this point?

Miyakawa
Taking the nuclear accident as an example, adults tend to obtain information through news and other media and they form their own views on nuclear power. However, young people often receive information about the accident from adults, which means they tend to adopt adults’ perspectives without question. Providing young people with information from diverse viewpoints can help deepen their understanding. That is why we stressed the importance of communication strategies that specifically target younger audiences.

Ogihara
With final disposal, we want to avoid a situation where people are unable to participate in discussions when the time comes due to a lack of knowledge. Once people become adults, they may find it difficult to learn because of busy schedules or lack of opportunities. We therefore believe education for young people must begin early. One observation I had during this program is that many adults can be quite stern in their demeanor, which can make it harder to convey information to young people. Since peers can share information more effectively among themselves, we felt that young people like ourselves should take the initiative in promoting awareness about final disposal.

Tsubokura
What struck me personally is how little adults understand the lives and habits of young people. The proposal from the Interest and Engagement Group regarding the “online chat function” was eye-opening. They told us that young people generally do not attend briefing sessions; instead, when something interests them, they first search for it online. However, in this case, they discovered that the information they wanted was not readily available. In other words, the point was not about the value of the chat function itself, but rather a suggestion to adapt the format of information dissemination to better suit young people.
Next, we will move on to discussions about how to convey experiences and emotions related to the earthquake and nuclear accident. One student mentioned that they had mostly heard negative stories, with few positive impressions. However, after listening to Mr. Masuda, the president of Japan Nuclear Fuel Limited, share his experiences from that time, the student said they were deeply moved. How did you obtain information about the earthquake and nuclear accident, and what impressions did you have?

Watanabe
Being from Fukushima, I have heard many stories from various people and had opportunities to learn about the events at school, so I believe I have a general understanding. However, I cannot say I have a deep knowledge of the details. That is why I was also moved by Mr. Masuda’s account.

Akiyama
I am from Tokaimura in Ibaraki Prefecture, which hosts nuclear-related facilities, and I am aware that the JCO criticality accident occurred there in the past. However, I too cannot say I have a deep knowledge of this.

Tsubokura
Would it be fair to say that most of you only know surface-level information? Compared to learning about history and events, this training program - where you listened to Mr. Masuda’s account and discussed the institutional design for the site selection process - offers a different quality of learning. Ogihara-san, what are your thoughts coming from Tokyo?

Ogihara
In Tokyo, discussions about final disposal rarely come up. I believe this is because it has not become a major social issue. Yet, as electricity users, we bear responsibility for the final disposal of radioactive waste generated by nuclear power. However, people in Tokyo tend to take electricity for granted and separate it from the issue of final disposal, so they do not feel the necessity of final disposal. We therefore need to raise awareness among Tokyo residents. I believe we should promote the idea that properly managing radioactive waste is a natural and essential responsibility.

Tsubokura
There are two types of information dissemination: one that provides broad but shallow knowledge, and another that, like this training program, offers detailed understanding. The issue of final disposal rarely appears in daily life, and ordinary high school students would not normally encounter it. In this context, I found the Interest and Engagement Group’s point - that this could become part of a career path when applying to university - particularly insightful. In other words, to reach a wider audience, combining this topic with something else of interest could be an effective approach, and we should explore this further. So, why did you decide to participate in this training program?

Miyakawa
My motivation was less about wanting to study radiation and more about the opportunity to visit Switzerland. I joined with a casual mindset, but the training covered in-depth topics, and now I feel confident expressing my own views. In the end, I was glad I participated.

Tsubokura
That’s a comment that Chairman Nishimoto would be very pleased to hear. How about you, Watanabe-san?

Watanabe
I had two reasons. First, I wanted to visit Switzerland. Second, some of my seniors from high school had participated before, and I thought I might be able to become like them, so I decided to join the program.

Tsubokura
Yes, this training program has been running for several years, and past participants have been contributing as facilitators and by helping with venue operations, thus creating connections and expanding the community. How about you, Akiyama-san?

Akiyama
At first, I didn’t have a great interest, but my parents encouraged me to consider visiting Switzerland. After reviewing the materials, my curiosity grew, and I decided to participate.

Tsubokura
Akiyama-san, you mentioned that Mayor Yamada of Tokaimura is someone you admire and respect, correct?

Akiyama
Yes, that’s right.

Tsubokura
It might sound as if I made you say that, but I thought perhaps seeing the mayor at work sparked your interest in nuclear energy. How about you, Ogihara-san?

Ogihara
Last year, one of my high school seniors participated in this program, so I attended the presentation session in Tokyo with a friend. During that session, a female student from Suttsu Town in Hokkaido left a strong impression on me. I thought it would be great if I could present a report like she did. That was my motivation to join.

Tsubokura
Listening to the four of you explain your motivations, it’s clear that none of you initially had a specific interest in high-level radioactive waste. That is an important fact that adults need to recognize. While adults often emphasize the importance of young people’s understanding, this discussion reaffirmed that we need more communication with the youth about how information is conveyed. From my experience in radiation education at schools, if we don’t convey emotions along with facts, the message doesn’t resonate. Adults need to think about how to incorporate emotion into factual communication.
Now, to conclude, I’d like each of you to share one thing you learned from this training program.

Watanabe
Until now, I was only able to get information about radiation from school, my parents, or the media, and I never really delved deeper. I hadn’t taken the next step to explore further. But during this training program, we heard many firsthand accounts, and I realized that I had barely scratched the surface. I think that once you take that extra step and understand people’s feelings, you truly begin to learn.

Tsubokura
It’s one of those cases where you don’t start because you’re motivated - you become motivated once you start, isn’t it?

Watanabe
I realized that by thinking about how the issues affected me personally, I became able to see various perspectives and possible solutions. Until now, I had never felt this was an issue close to me, so I had never thought about radioactive waste. Visiting the sites and reflecting on what I experienced enabled me to make it personal.

Akiyama
I came to understand that nuclear issues are something the entire nation must consider. While it’s important to have in-depth discussions about systems and public communication, I think the first step is figuring out how to engage the public and spark their interest.

Ogihara
Through this training program, I felt the importance of learning. I started by taking to heart the feedback from the instructors on our presentations. That helped me connect what I learned in Switzerland in order to draw comparisons and contrasts with the situation in Japan. I think the experience will help me tackle other challenges in the future.

Tsubokura
I believe everyone in the audience now understands that high school students are capable of expressing their opinions clearly and engaging in meaningful discussions. For the students, this training program has provided a starting point for learning, so please continue to consider and reflect on these issues. If even one more person like you joins this effort, I am confident that society will begin to change. On a personal note, I am truly glad to have had the opportunity to work with all of you. Please give a big round of applause to these high school students.

Audience Discussion (honorifics omitted)

A Q&A session was held in which the fifteen participating high school students responded to questions, followed by lively discussions with attending adults, university students and fellow high school students.
The session was moderated by Ms. Yumiko Nishimoto, Managing Director of the nonprofit organization Happy Road Net.

Nishimoto: The much-anticipated session has arrived. Adults, please brace yourselves! And, to the high school students here on stage, don’t just answer questions — feel free to ask your own. Let’s start with the university students.

Sota Ito, First-year student, Tohoku Gakuin University:

I participated in the Fukushima High School Academy in 2023. In your presentations today, you emphasized improving information dissemination. What do you expect from the recipients of that information?

Nishimoto: Who would like to answer this question?

Kenta Kikuchi, Iwaki Sakuragaoka High School:

To move closer to solving the challenges of final disposal, it’ s not enough to simply learn. I believe the most important thing is to internalize that knowledge and make it your own.

Nishimoto: Well said. I hope the senior students will keep working hard too! Next question, please.

Miyu Sato, Second-year student, Haramachi High School:

I also participated in the Fukushima High School Academy in 2024 and visited Sweden. I felt Switzerland’s situation was quite different from Sweden’s. In the presentation by the Interest and Engagement Group, you proposed expanding the program nationwide. I assumed the target would be high school students, but the future will also be shaped by elementary and junior high school students. How do you view educational activities for younger students?

Nishimoto: Who can respond?

Kisan Nakatsugawa, First-year student, Soma High School:

Our Interest and Engagement Group proposed nationwide expansion of the program. I don’t think elementary and junior high school students should go overseas, but instead participate in domestic training programs, such as visiting Japan Nuclear Fuel Limited (JNFL) facilities in Aomori or the Fukushima Daiichi Nuclear Power Station.

Nishimoto: Okay, next question from another high school student.

Ikue Takano, Third-year student, Soma High School:

I also participated in this program last year and visited Sweden. There, I learned that dialogue aimed at building consensus with local residents is essential for advancing the geological disposal project. On the other hand, I understand the reasoning behind simplifying the process to accelerate site selection, as you proposed. With that in mind, I have a question about Switzerland’s site selection process. You mentioned that local communities do not have veto power. Why is that?

Riku Tada, Second-year student, Haramachi High School:

In Switzerland, candidate sites are narrowed down step by step until the safest location is chosen. During this process, local municipalities do not have veto power. Therefore, unlike in Japan, there is no need to seek approval at each stage — the process simply moves forward. Ultimately, the decision is made through a national referendum. So, in a sense, there is veto power at the national level. I believe this approach prioritizes safety above all else.

Nishimoto: Let’s hear from a student from Aomori.

Sora Numabe, First-year student, Rokkasho High School:

Germany and Austria, neighboring countries of Switzerland, are pursuing anti-nuclear policies. How has Switzerland responded to these neighboring countries?

Sota Itakura, First-year student, Sapporo Kosei High School:

We visited a candidate site near the German border. From a distance, we saw houses within the designated surface facility area whose residents had not been

informed until the site was selected. Switzerland has a system called “regional conferences”, where members — including local residents — discuss issues such as where to place surface facilities. Interestingly, representatives from neighboring Germany also participate in these discussions, so the process involves surrounding countries as well.

Nishimoto: Now, let’s move on to the adults. Mayor Osamu Yamada of Tokaimura, congratulations on your recent election win! You were mentioned as being highly respected — clearly, you’re a popular mayor.

Osamu Yamada, Mayor of Tokaimura:

I was truly impressed by the high school students. Adults often misunderstand things. We think we’re doing the right thing and that progress will follow, but it’s not that simple. We need to listen to young people and reflect their voices in policy. Earlier, panelist Hana Ogihara said, “adults can be quite stern in their demeanor”. When this topic comes up, adults tend to frown. So, what can we do to change such expressions?

Nishimoto: Hana, you should answer that. Go ahead.

Hana Ogihara, Second-year student, Institute of Science Tokyo High School:

“Changing adults’ expressions” is a tough challenge. My image of adults is that they never smile, no matter what you say. They seem stubborn, difficult, always furrowing their brows and dismissing kids as cheeky. Seeing everyone smiling now surprises me. We’ve made various proposals on final disposal and I believe the young people here share the same commitment to solving these issues. If this commitment continues and we can keep making proposals that bring smiles to your faces, that would be wonderful.

Nishimoto: Excellent answer. Now, several presentations mentioned information dissemination. Mr. Nakagawa, do you have a question on this?

Toshiya Nakagawa, Chairman, Fukushima Minyu Newspaper:

Your passionate presentations were truly heartfelt. Newspapers today are often called “old media”, and it’s hard to get young people to read them. Earlier, the Interest and Engagement Group proposed using anime for information dissemination. What kind of anime do you envision?

Junki Miyagawa, Second-year student, Iwaki High School:

We think an anime focused solely on final disposal would be boring. As we mentioned in our presentation, something like “Cells at Work”, which personifies cells, could work. We could personify radiation to make it more relatable and engaging for young people while incorporating accurate information.

Nishimoto: You all speak so confidently in front of adults — well done. Let’s hear from those responsible for receiving these proposals.

Akira Yamaguchi, President, NUMO:

Many of your proposals on information dissemination were impressive. We currently hold nationwide consultation sessions. One proposal suggested using a chat function for virtual communication. That would make interaction easier than in-person meetings. However, we hesitate to do so because we fear an online backlash. You’re all familiar with social media. What advice can you give to ease adults’ concerns?

Nishimoto: Who wants to answer?

Nina Maruyama, Second-year student, Waseda Saga High School:

False information does spread on the internet, but instead of fearing a backlash from misinformation, we should view it as an opportunity to increase the amount of spaces to provide accurate information. I hope the chat function can be implemented.

Akira Yamaguchi: That’s an important point. You’re saying we should share information even if mistakes happen and correct them later. Thank you.

Nishimoto: Adults often hesitate because of their job title. That’s where the Agency for Natural Resources and Energy comes in.

Takeshi Fujimoto, Director-General, Fukushima Nuclear Accident Response and Reconstruction Policy:

Today’s discussion gave us courage. We worry about many things, but if that worry prevents communication, we’re failing. We want to move forward with NUMO and adopt the mindset that mistakes can be corrected.

Nishimoto: When the students visited Fukushima Daiichi, they had lunch with TEPCO Vice President Akira Ono and staff. This was the result of a request made at last year’s presentation session. How did the employees react?

Nobuhide Akimoto, Managing Executive Officer, TEPCO Holdings:

The lunch was well received. Adults hesitate before taking the first step, but once they do, new perspectives emerge. We want to keep trying new things and build on what we learn.

Nishimoto: Please continue engaging with students. Now, do any students have questions for the adults?

Hana Ogihara: I have a question about social media outreach. NUMO’s posts don’t seem designed to be visually appealing. Are young staff managing these accounts?

Masatoshi Ueda, Executive Director, NUMO:

NUMO operates various social media accounts, but frankly, older staff like us can’t handle them. The frontline team consists of staff just five or six years older than you — mostly first- or second-year employees. Listening to you today, I realized we often stop initiatives saying, “Better not”. Your feedback reminded us to approach this with the mindset of an 18-year-old.

Nishimoto: It’s hard to think like an 18-year-old when you’ve forgotten what that feels like. Next question?

Kokoro Sakuyama, Second-year student, Futaba Future School:

I have a question for the high school students. In Switzerland, citizens seem highly engaged in politics. But in my community, when I talk about decommissioning or final disposal, people say, “You’re so serious” and it feels discouraging. How do people around you react?

Sora Numabe: I completely understand. Many people around me show little interest in society and focus only on their smartphones, ignoring reality. That’s a big problem.

Nina Maruyama: I have a question for the Agency for Natural Resources and Energy. I heard from the Ministry of the Environment that policies aim to encourage residents. Participants here come from nuclear-related regions, so interest is high. But people in unrelated areas don’t engage. How can we reach them?

Hiroki Yokote, Director, Radioactive Waste Management Office, METI:

Your proposals are inspiring. We want to broaden understanding. For example, university students hold public events at campus festivals and we conduct dialogue sessions nationwide. But there’s no magic solution — we proceed steadily. I also have a question: Your proposals for improving the selection process were interesting, but do they risk becoming top-down? Some municipalities already show strong local commitment. We want to incorporate local voices. What do you think?

Nishimoto: Great — questions leading to more questions! Who can respond?

Sota Itakura: I’m from Kamiiso Village. When our village applied for the literature survey, the subsidy funded a new hot spring, creating vibrancy. But people hesitate when asked to step forward — maybe it’s cultural. The same applies to final disposal: even if land is suitable, people fear stigma or unwanted attention. I think we should keep the current application system but also adopt Switzerland’s approach of narrowing down sites.

Nishimoto: A first-year student just responded to a senior official — amazing!

Riku Tada: I have a question for NUMO. I heard dialogue sessions haven’t been held in Fukushima, likely out of consideration for those who suffered due to the accident. But this means that less information reaches us. I’m not saying “right now”, but someday, please hold sessions in Fukushima so we can discuss the issues and learn.

Nishimoto: A student wants dialogue sessions in Fukushima. Mr. Yamaguchi, your thoughts?

Akira Yamaguchi: I understand the need for sensitivity, but the purpose of these sessions is nationwide awareness. Excluding Fukushima contradicts that purpose. Timing matters, but ultimately, we must include Fukushima. Using chat or virtual tools could make sessions accessible nationwide. That’s a valuable insight.

Nishimoto: So, we might soon see dialogue sessions in Fukushima schools. Time is up — I wish we could hear from more people, but we couldn’t pass the mic to everyone. Thank you all for listening sincerely to the students’ opinions.

Feature

1 The Importance of Continued Learning

Hana Ogihara, Institute of Science Tokyo High School

◇ The Current Situation in Japan

Participating in the Fukushima High School Academy 2025 made me keenly aware of the importance of being informed. Among the fifteen high school students from across Japan who joined the program, only three - those from Hokkaido and Saga prefectures, where candidate sites for final disposal facilities are located - had detailed knowledge about the geological disposal of high-level radioactive waste. I realized that I had never made a serious effort to learn about this issue. Without understanding geological disposal, I could not even form my own opinion. This realization left me both embarrassed by my ignorance and deeply concerned about society’s overall lack of awareness.

One of the greatest challenges in making progress on final disposal is the widespread indifference within society. While regions that host candidate sites see active debate and a variety of opinions, in regions far removed from these sites the topic rarely even comes up. This lack of discussion stems from limited opportunities to engage with the issue and a failure to convey why it matters personally. My own experience underscored how little I knew about final disposal and reinforced the importance of learning. At the same time, I felt uneasy about a reality in which many people cannot make informed judgments due to insufficient knowledge.

◇ Safety and Peace of Mind

The most striking lesson from the training program was realizing that “safety” and “peace of mind” are not the same. The accident at Tokyo Electric Power Company’s Fukushima Daiichi Nuclear Power Station was partly caused by insufficient preparation for unforeseen events that exceeded established safety standards. A TEPCO employee explained that, having experienced the unexpected, they now strive to consider every possible risk when implementing safety measures.

Yet, even before the Fukushima Daiichi Nuclear Power Station Accident, Japan had experienced incidents such as the JCO criticality accident in Tokaimura, Ibaraki Prefecture. This raises the question: no matter how advanced nuclear technology becomes, can public anxiety ever be completely eliminated? In other words, technical “safety” does not automatically translate into emotional “peace of mind”. However, receiving technical explanations deepened my understanding of nuclear power and helped me appreciate the value of knowledge in forming a balanced perspective.

As nuclear power plants continue to operate and more may be restarted in the future, high-level radioactive waste will keep accumulating. Geological disposal will become an unavoidable societal challenge by the time our generation reaches adulthood. Therefore, we must begin building a foundation of knowledge now, so that regardless of whether we support or oppose nuclear power, we can express our opinions based on sound reasoning.

Through this training, I realized that I had only “thought I knew” about nuclear power and geological disposal. Now, I can say I have begun to “understand” the fundamental issues. This experience strengthened my resolve to keep learning and to create opportunities for dialogue with those around me.

Knowledge is the first step toward action. Rather than leaving safety and peace of mind to others, I want to develop into a person who can form opinions and continually think about how to address society’s challenges.

◇ The Future of Society

As a high school student living in the Tokyo metropolitan area, I used to think: “I understand that a final disposal site for high-level radioactive waste is necessary, but since it will never be built in an urban area, it has nothing to do with me”. However, the Tokyo region is one of the largest consumers of electricity in Japan. That is precisely why those of us who benefit from this energy have a duty to view this issue as our own responsibility and to think seriously about it.

Feature

② Site Selection and Me

Riku Tada, Haramachi High School, Fukushima Prefecture

◇ Key Differences Between Switzerland and Japan

What made the biggest impression on me during the training program was the difference in values, national character, and final disposal site selection systems between Japan and Switzerland. In Japan, site selection relies on two approaches: a "public application system", where municipalities volunteer, and a "request-based system", where the national government makes suggestions for consideration. These methods reflect caution and sensitivity toward public sentiment, which is strongly influenced by negative perceptions of nuclear energy due to the atomic bombings and past nuclear accidents. However, in practice, the government only approaches municipalities after confirming their willingness, and more than twenty years after the program began, site selection remains significantly delayed.

In contrast, Switzerland prioritizes scientific and geological safety above all else. The national government and Nagra (National Cooperative for the Disposal of Radioactive Waste) lead the process of identifying candidate sites, and the country has already finalized its disposal location. Furthermore, as a direct democracy, Switzerland requires a national referendum if a certain number of objections arise before government approval. Conversations with Nagra staff revealed that Switzerland has far less negative sentiment toward nuclear energy - indeed, I sensed a forward-looking attitude. This experience allowed me to truly appreciate the differences in systems and values between the two countries.

◇ Proposals for Japan's Site Selection Process

I considered how Japan should move forward in selecting a final disposal site. Before visiting Switzerland, I believed Japan should adopt the Swiss approach, which determined a site in a relatively short and rational timeframe. However, as the training program progressed, I realized that Switzerland's system also presents challenges, and my perspective changed.

The first reason was a comment from an official at the Swiss Federal Office of Energy, who said, "There was almost no opposition to site selection". If I were told that a disposal site would be built near my home, I would certainly feel uneasy. The absence of opposition raised doubts in my mind.

The second reason was that, while Nagra staff emphasized that "we have had continued discussions over a long time," residents of the site that was selected only learned about the need for relocation due to surface facility construction after the site was chosen. This left me questioning whether adequate dialogue had truly taken place between the government and local communities.

Based on these observations, I concluded that Japan should not simply adopt the Swiss model. Instead, we should combine the strengths of both systems, preserving Japan's commitment to listening carefully to residents' opinions. Specifically, I propose that NUMO (Nuclear Waste Management Organization of Japan) identify candidate sites based on scientific and geological safety, while proceeding within Japan's existing framework. At the same time, the process should allow flexibility, such as shortening timelines where local conditions permit. Expert-led identification of candidate sites would ensure safety and reduce the burden on municipalities. Furthermore, adapting the process to local circumstances could accelerate the selection while incorporating residents' input more effectively.

◇ Applying Knowledge to the Future

Through this training program, I learned the importance of considering diverse factors rather than relying solely on rationality. In society, there are times when something that appears irrational must take precedence over something rational. Issues which affect many people's lives, such as the selection of a final disposal site, cannot be driven by logic alone - they must be built on trust.

I also came to understand the difference between "giving information" and "being understood", and the challenges involved. During the program, we engaged in repeated, in-depth discussions, which taught me the importance of considering the recipient's perspective. Moving forward, I aim to organize key points clearly and focus on ensuring that my message truly resonates. I will continue striving to become an adult who can help support people's lives in the future.

Feature

❸ Knowledge Gained through the Program

Sota Itakura,
Sapporo Kosei High School

◇ Insights from the Training

I gained two major insights through this program.

The first was the importance of teamwork. During the program, we often worked late into the night, facing both physical and mental challenges. The issues had no clear answers, necessitating deep thought and long discussions. Yet, by supporting and helping one another, we overcame these difficulties. At times, opinions clashed and setbacks left us discouraged, but in the end, we created a presentation that satisfied everyone.

The second was the complexity of the site selection process for final disposal. I grew up in Kamoenai Village in Hokkaido, one of the candidate sites. As a local, I often felt frustrated by the slow progress of the survey work. However, through this program, I learned about the selection process and interacted with stakeholders beyond my village, which made me realize how complicated and challenging this issue really is. Researching media coverage also revealed many negative opinions, reinforcing for me the importance of persistent efforts to promote understanding.

Interacting with high school students from Tokyo, Fukushima, Saga and other regions broadened my perspective. I was particularly inspired by proposals from other groups, such as “GUMO Chat” and “Shin-Taiwa no Ba” (new dialogue framework). I thought they were innovative ideas for stimulating discussion on geological disposal.

The knowledge I gained and the wonderful friendships I formed during this program will serve as a foundation for my future. I will continue thinking about geological disposal and regional issues, and take action in my own way to contribute to solutions.

◇ My Path Forward

I have been thinking about how to make the most of this experience. From what I observed in Japan and Switzerland during the training, I am convinced that open discussion about geological disposal is the most critical factor. This is especially true for the municipalities directly involved: Kamoenai Village and Suttsu Town in Hokkaido, and Genkai Town in Saga Prefecture.

I’d like to become someone who encourages these conversations. Specifically, as a high school student from Kamoenai Village and a participant in this program, I intend to use my position to promote dialogue among those around me.

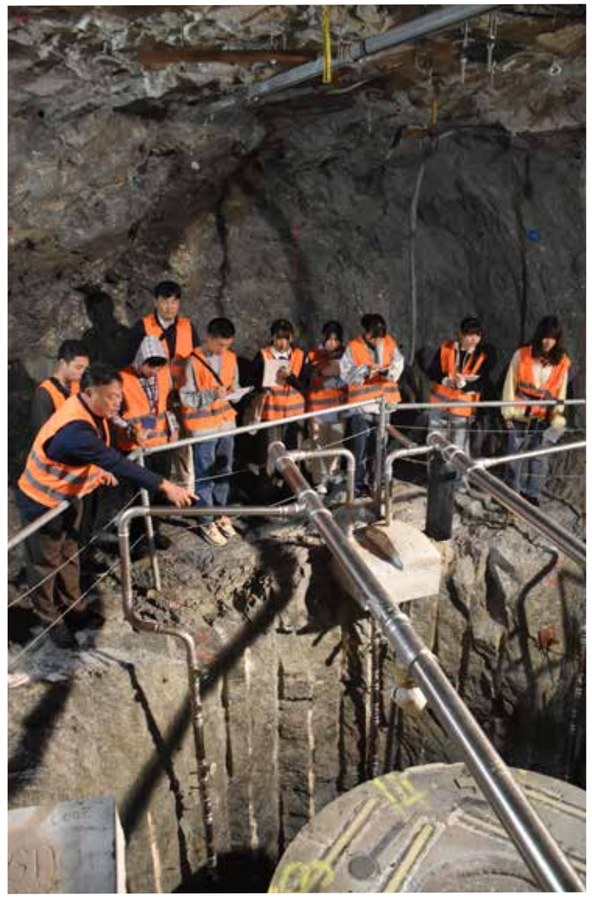
Few people actively discuss geological disposal. Behind this lies a sense of indifference - “I’m not interested” or “It doesn’t concern me”. In reality, participation in local dialogue sessions in Kamoenai remains low, and many villagers, including younger students, show little interest. However, if a high school student like me takes an active role, it might inspire others too. That is my hope.

My involvement also serves another purpose. When discussions occur within a limited community, opinions risk becoming one-sided. Having exchanged views with students from across Japan, I now recognize the diversity of perspectives. By bringing these insights into local conversations, I can help ensure balanced and constructive dialogue.

Going forward, I will actively participate in Kamoenai’s discussion forums and share the knowledge and ideas I gained through this training program with residents. By speaking about geological disposal in an everyday environment, I aim to spark interest among younger students and other residents, encouraging them to join the conversation. My goal is to expand the circle of dialogue within the community and create opportunities for more people to think seriously about this issue.

Feature

4 Creating Nationwide Interest, Understanding and Engagement regarding Final Disposal



Ai Sato, Iwaki Sakuragaoka
High School, Fukushima Prefecture

◇ Interest and Engagement from the Public and Myself

Through this training program, I learned in particular the importance of creating deeper public interest, understanding and engagement regarding the final disposal of high-level radioactive waste. Japan’s selection process for a final disposal site has not progressed as expected, and I believe one of the major reasons is that very few municipalities are willing to undergo the first stage of the process: a literature survey. To overcome this situation, it is essential that all citizens acquire accurate knowledge about final disposal and that more municipalities become willing to allow literature surveys to be conducted.

Furthermore, if the project moves forward without sufficient public understanding, emotional opinions and misconceptions may lead to friction among residents in the areas under consideration, potentially damaging community relationships. Therefore, it is crucial that all citizens, including younger generations, take an interest in this issue and gain the correct knowledge. However, at present, nationwide awareness of final disposal remains inadequate and I feel strongly that this situation must be addressed.

I also learned about the “NIMBY” (Not In My Back Yard) phenomenon through this program. This refers to people who, despite understanding the necessity of a disposal site, do not want it located in their own community. The NIMBY problem is largely psychological and not easily resolved. However, as I personally experienced, visiting related facilities, learning about the safety of geological disposal, and sharing concerns and questions with peers helped ease such intangible anxieties. From this experience, I am convinced that regardless of whether one supports or opposes the project, dialogue is the key to deepening understanding and ultimately solving the problem.

◇ Proposals for the Younger Generation

To enhance public interest and understanding, it is essential to provide more opportunities for communication and outreach. In particular, considering the current low level of awareness among younger generations and their limited participation in nationwide consultation sessions, I believe that information dissemination targeted at young people should be improved. Specifically, I propose initiatives such as utilizing readily-understandable anime for public relations activities and creating online platforms where people can ask questions freely at any time.

◇ My Path Forward

Through this program, I have learned the importance of “thinking of issues as my own”. Having experienced evacuation during the nuclear accident, I held a preconceived notion that nuclear power was inherently dangerous and unconsciously avoided learning or thinking about issues related to it. However, I came to realize that the final disposal of high-level radioactive waste cannot be described simply as “dangerous”. I felt strongly the need to acquire accurate knowledge and think independently, rather than be swayed by preconceptions and external opinions.

It is vital that people across the country become aware of this issue and are given opportunities to consider it as something that affects them personally. To achieve this, we must further enhance public outreach activities that attract interest and create accessible forums for dialogue. I also pledge to continue thinking about this issue and engaging with it moving forward.

Lessons from Switzerland 1

The final disposal of high-level radioactive waste (“nuclear waste”) is an unavoidable challenge for any country operating nuclear power plants

● High school students visiting the Grimsel Test Site for geological disposal research

The final disposal of high-level radioactive waste (nuclear waste) is an unavoidable challenge for any country operating nuclear power plants. In Japan, nuclear waste continues to accumulate, yet there are still no clear prospects for selecting a disposal site.

According to the Japan Atomic Energy Relations Organization, as of September 2024 there were approximately 16,770 tons of spent nuclear fuel stored domestically, already occupying more than 75% of the available storage capacity of about 21,440 tons. Despite the urgency, a nationwide discussion has yet to take place.

Currently, the initial stage of site selection, a literature survey, is underway in Suttsu and Kamoenai in Hokkaido, and in Genkai, Saga Prefecture. No other municipalities have expressed willingness to participate, leaving the process stalled. Consequently, Japan’s nuclear policy is often criticized as a “house without a toilet”.

Internationally, the most widely accepted disposal method is geological disposal, which involves burying nuclear waste deep underground in stable rock formations. Japan plans to reprocess spent fuel to extract reusable uranium and plutonium, then vitrify the remaining liquid waste into a glass form. This material will be sealed in stainless steel containers, surrounded by buffer materials and placed at depths of 300 meters or more.

Switzerland is ahead of Japan in implementing final disposal measures. It has already identified a candidate site for geological disposal. The National Cooperative for the Disposal of Radioactive Waste (Nagra) proposed the site in 2022 based on scientific evidence and geological safety, narrowing down options through a phased process.

The proposed final site is the Nördlich Lägern region, located north of Zurich and spanning the cantons of Zurich and Aargau. Nagra submitted its application for federal approval in November 2024. The site is expected to be finalized in the 2030s, with construction to follow and operations beginning after 2050.

Nagra has conducted extensive research since establishing the Grimsel Test Site in the Swiss Alps in 1983. Prioritizing safety, it shifted from crystalline rock to the less permeable Opalinus Clay formation as the preferred host rock.

A distinctive feature of Switzerland’s approach is its avoidance of a public application system like in Japan. Instead, it has incorporated citizen participation from an early stage, gradually narrowing down options with government approval.

Lessons from Switzerland 2

Final disposal must ensure long-term safety and a framework is needed that allows local communities to envision coexistence with the site

● The designated construction site for the surface facilities of the final disposal repository. The only resident has already relocated

In Switzerland, the proposed final disposal site for nuclear waste in the Nördlich Lägern region has faced little opposition. The selection process was based on scientific evidence and geological safety, with options narrowed down in stages. A key factor was the role of “regional conferences”, established by the federal government to involve citizens and local communities.

Switzerland began investigating final disposal in the 1970s and, by the 1990s, had developed plans for geological disposal in the Opalinus Clay formation. The National Cooperative for the Disposal of Radioactive Waste (Nagra) initially identified six regions based on geological conditions during the first stage of its investigation, reduced them to three during the second stage and finally proposed the rural Nördlich Lägern region to the federal government in 2022.

Each candidate site established a regional conference of around 100 participants, including local governments, residents, economic groups, political parties, churches and even representatives from neighboring German municipalities. These conferences promoted understanding through the provision of expert information and considered land use and regional development. During the second stage, discussions included the location and layout of surface facilities near residential areas.

In Nördlich Lägern, regional conference proposals were reflected in the final plan. Nagra initially intended to build all surface facilities within the candidate area, but after consultations, it was instead decided to add the facility for sealing waste in canisters to an existing nuclear site. The entrance and other surface facilities will be located in the rural municipality of Stadel in the canton of Zurich, requiring the relocation of a single farmhouse.

“It was not an easy decision,” emphasized Nagra staff, noting that “the key is to maintain transparency throughout the process and find meaningful ways to engage with the community”. A local mayor involved in the regional conference recalled, “There were strong opinions in the community, but these are issues we must resolve together”.

Final disposal must guarantee long-term safety: not only technical safety but also the understanding of communities that will coexist with the facility for generations. In Switzerland, citizen participation through regional conferences during the site selection process helped foster a sense of ownership by encouraging communities to envision hosting the facility.

To avoid passing the burden on to future generations, every citizen must confront the responsibility of final disposal. Yet, public interest remains low. To raise awareness, the government should strengthen outreach and education efforts. Japan should also learn from Switzerland and create mechanisms that enable communities to imagine coexistence with a final disposal site during the selection stage.

On the Spot: Seeing with one's own eyes

"Learning from Switzerland, a Country Advanced in its Progress"

"Understanding the Current Situation in Aomori and Fukushima"

In the summer of 2025, fifteen first- and second-year high school students from Fukushima, Hokkaido, Tokyo, Ibaraki and Saga visited facilities related to high-level radioactive waste ("nuclear waste") in Switzerland and Rokkasho Village in Aomori Prefecture. Through these visits, the students learned about domestic and international initiatives and came to view the issue of nuclear waste disposal as a matter of personal responsibility.

"Learning from Switzerland, a Country Advanced in its Progress"

【Bern, Capital of Switzerland】

Switzerland has a population of approximately 9 million and a land area of about 40,000 square kilometers - smaller than Japan's Kyushu. It is a federal republic composed of 26 cantons and maintains a policy of permanent neutrality. The country has four official languages: German, French, Italian and Romansh. The flight time from Japan is roughly 14 hours.
Bern, the capital, is the political center of Switzerland and home to the Federal Palace. Although Bern's population is only about 140,000, Zurich - the country's economic and cultural hub - has around 400,000 residents and Geneva, which hosts the European headquarters of the United Nations, has around 200,000. Swiss cities generally have relatively small populations.
Bern is renowned for its 15th-century stone architecture, with the entire Old Town designated as a UNESCO World Heritage Site. Highlights include the Zytglogge clock tower, numerous fountains and the towering spire of the cathedral: sights we could never tire of looking at.

【Albert Einstein】

Bern, the capital of Switzerland, was home to physicist Albert Einstein and his family from 1903 to 1905. During this time, he published revolutionary papers, including the theory of special relativity.
After graduating from the University of Zurich, Einstein settled on Kramgasse in Bern's Old Town, where he pursued his research while working at the patent office.
His former residence is now the "Einstein House" museum, featuring recreated furnishings, research materials and personal notes. The admission fee is just over 1000 yen and nearby shops sell Einstein-themed goods, offering visitors the chance to trace the footsteps of a scientific genius.

【Swiss Franc】

The currency of Switzerland is the Swiss Franc (CHF/SFr). Since 2016, banknotes have featured a new design. Coins include denominations such as the "Rappen" (1 Swiss Franc = 100 Rappen).
Although Switzerland is not a member of the EU, payments in euros are accepted at Swiss Federal Railways, department stores, luxury hotels and tourist destinations; however, change is usually given in Swiss Francs.
For Japanese visitors, high prices due to the weak yen can be a challenge. Prices in Switzerland are two to three times higher than in Japan and dining out can be particularly expensive. During the visit in mid-August, the exchange rate was approximately 1 Swiss Franc = ¥182.

【Swiss Cuisine】

Switzerland, blessed with rich natural resources, is a dairy powerhouse renowned for its cheese-based dishes made from fresh milk. It is also famous as a leading chocolate producer, home to numerous world-class brands. Switzerland is credited with inventing milk chocolate, which uses fresh dairy milk. Supermarkets and souvenir shops stock an impressive array of chocolates. Another popular Swiss specialty is "Rivella", a soft drink made from whey. Its unique flavor is surprisingly addictive.

③ Zwilag Central Interim Storage Facility

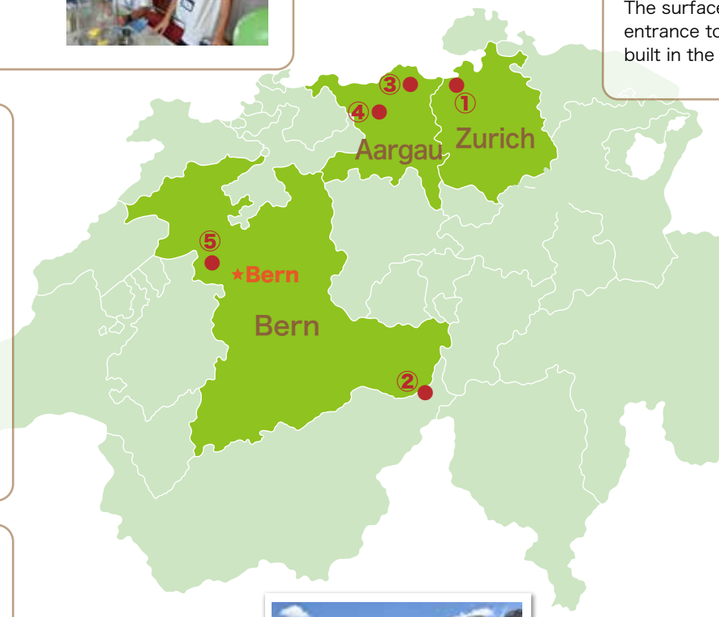
Located in Würenlingen, Aargau Canton in northern Switzerland, Zwilag is operated by a company funded by nuclear power plant operators. It serves as a centralized facility for all radioactive waste generated within the country. Spent nuclear fuel and vitrified waste returned from overseas reprocessing are housed in dry interim storage at this site.

④ Nagra (National Cooperative for the Disposal of Radioactive Waste)

Nagra is the implementing organization for radioactive waste disposal in Switzerland. It was established in 1972 by six entities - the federal government and five nuclear power plant operators. The headquarters are located in Wettingen, Aargau Canton in eastern Switzerland.

⑤ Mühleberg Nuclear Power Plant

Located west of Switzerland's capital, Bern, the Mühleberg Nuclear Power Plant began operation in 1972 with a single boiling water reactor. The plant was permanently shut down following the Fukushima Daiichi Nuclear Power Station Accident and Switzerland's first decommissioning process commenced in 2019. The removal of spent fuel was completed in 2023 and dismantling is scheduled to finish by 2034.



① Switzerland's Proposed Site for Final Disposal

In 2022, Nagra selected "Nördlich Lägern", located in northern Zurich Canton near the German border, as the proposed site for Switzerland's final disposal facility.
The geological repository will be constructed 800 meters underground within the Opalinus Clay formation, which offers excellent water-shielding properties.
The surface facilities, including the entrance to the underground areas, will be built in the rural area of Stadel in Zurich

② Grimsel Test Site

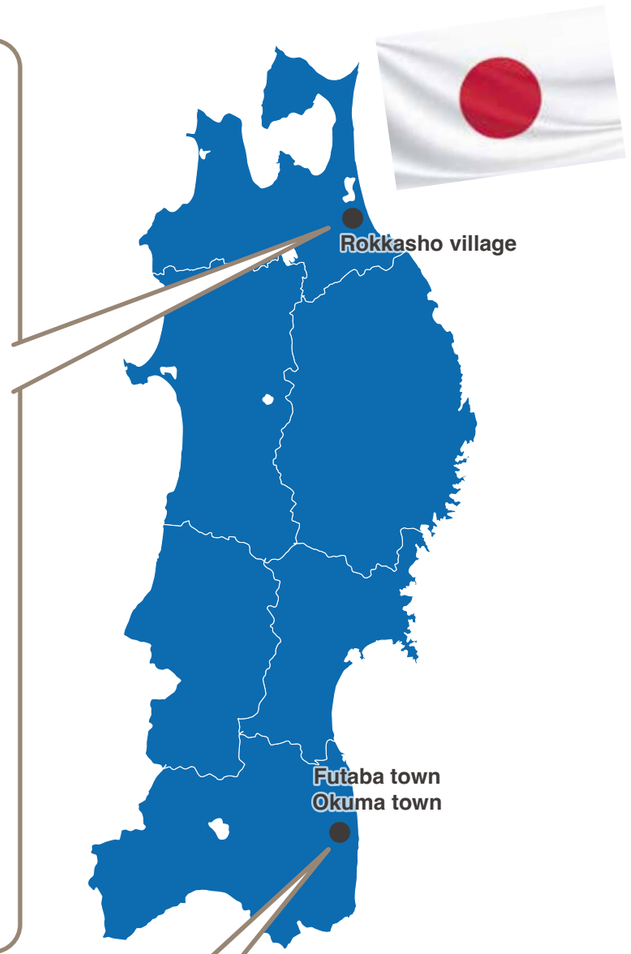
The Grimsel Test Site is an underground research facility established by Nagra in 1984. It is located adjacent to the access tunnel of a pumped-storage hydroelectric power plant at the Grimsel Pass in southern Switzerland, at a depth of 450 meters below the surface. The facility conducts research and demonstration projects related to geological disposal and radioactive waste management and is also used for international research collaborations, including projects involving Japan.

On the Spot: Seeing with one's own eyes

"Understanding the Current Situation in Aomori and Fukushima"

Japan Nuclear Fuel Limited (JNFL)

The company was established to realize the commercial utilization of the nuclear fuel cycle. It operates a "Low-Level Radioactive Waste Disposal Center" , a "High-Level Radioactive Waste Storage Management Center" and a "Uranium Enrichment Plant" . It is working toward the operation of a "Reprocessing Plant" and a "MOX Fuel Plant" to recycle spent fuel.
At the management center, which stores vitrified waste from reprocessing high-level radioactive waste, visitors can stand on top of the vitrified waste. The PR Center provides an overview of reprocessing operations.



Tokyo Electric Power Company (TEPCO) Fukushima Daiichi Nuclear Power Station

Following the Great East Japan Earthquake, Units 1 through 3, which were in operation at the time, failed to maintain cooling after shutdown, resulting in severe core damage. The decommissioning process is expected to continue for 30 to 40 years.
Contaminated water generated from cooling the melted fuel debris is treated using the Advanced Liquid Processing System (ALPS). This treated water has been regularly discharged into the ocean since August 2023, accompanied by ongoing environmental monitoring to ensure safety.
In 2024, work began on the most critical challenge in the decommissioning process: the removal of fuel debris. Two trial retrievals have been successfully completed and analysis of the debris retrieved is underway to inform plans for the future full-scale removal.

Comments in Response

Takeshi Fujimoto, Director-General, Fukushima Nuclear Accident Response and Reconstruction Policy, Ministry of Economy, Trade and Industry (METI)

First, I would like to commend the high school students on their efforts. This was my first time attending and I was truly impressed - the level of your work far exceeded my expectations and provided me with both inspiration and valuable learning. Your proposals were well-structured, and I particularly appreciated the suggestions for streamlining processes and the innovative use of "Gumo Chat" for information sharing. Communication and outreach are areas we value highly, though I must admit they are not always our strongest suit. Your ideas will serve as an excellent reference for us.
I would like to mention three key points. First, the value of on-site experience. The depth of your presentations reflects not only your growth but also the impact of visiting the actual sites - Fukushima Daiichi, Rokkasho Village and Switzerland - and engaging directly with local stakeholders. At METI, we often emphasize the principle of "local-oriented policy". As someone responsible for Fukushima, I have visited many times and will continue to do so, speaking with local communities and observing conditions firsthand. Whatever career you pursue, I encourage you to value direct engagement with local communities.
Second, the importance of discussion and dialogue. I believe your late-night debates with peers contributed greatly to the quality of your proposals. Furthermore, the interactive exchanges during the session significantly deepened understanding. This is a unique and commendable feature of this program.
Third, the excellence of your presentations. In government, presentations often suffer from overcrowded slides and excessive detail in an effort to convey accuracy, which can obscure key points. Today's presentations were concise, well-structured and clearly the result of thorough preparation.
As an additional note, I was impressed by the support provided by alumni of this program. I hope that in the coming years, today's presenters will guide and assist future participants.
Finally, allow me to offer one piece of advice: always think for yourself and question conventional wisdom. Listening to your presentations made me reflect on this even more. Please continue to question whether commonly accepted views are truly correct.
Today's session was a sobering reminder of our responsibilities. Our generation must advance the work that lies before us. Decommissioning and final disposal are not easy challenges, but progress is essential. I look forward to walking this path together with all of you.

Address

Hiroki Yokote, Director, Radioactive Waste Management Division; Head, Decommissioning Industry Office: Agency for Natural Resources and Energy; Ministry of Economy, Trade and Industry (METI)

I participated in last year's training program in Sweden and was greatly inspired by the high school students who engaged in late-night discussions with their peers and delivered presentations in unfamiliar English. I truly wished to join you again this year; however, I had to remain behind on standby, which was a great shame.
In terms of the final disposal of high-level radioactive waste, I firmly believe this is a challenge that the current generation, having utilized nuclear power, must resolve. Radioactive waste already exists. While future advancements may lead to better disposal methods, postponing the issue in the hope of an uncertain future risks leaving a significant burden on generations to come.
At present, geological disposal remains the only viable solution and I consider it our generation's responsibility to advance this approach. The government, NUMO and electric power utilities have all been working toward this goal, though progress has not always been smooth. Nevertheless, I feel that understanding of the necessity for final disposal has deepened.
Indeed, the ongoing literature surveys in Suttsu and Kamoenai in Hokkaido, as well as in Genkai in Saga Prefecture, demonstrate that we are moving forward. It is essential to further expand this circle of understanding.
In promoting final disposal, I hope that every individual who uses electricity will recognize the issues surrounding nuclear power, final disposal and Fukushima's reconstruction, and reflect on them from their own standpoint. For these high school students, I believe this training program has provided such an opportunity. I would very much like to hear everybody's thoughts.

Summary

Masaharu Tsubokura, Professor and Chair, Department of Radiation Health Management, Fukushima Medical University

Thank you all for taking the time to join us here today.
It has been less than two months since I first met the fifteen high school students, yet I have grown close enough to call each of them by their first names.
Just as I felt last year, I am once again amazed by the speed at which the high school students have grown in themselves. The final stage of their development was particularly striking - like watching all the pieces suddenly fall into place.
At the beginning, their knowledge was limited and I honestly thought it would be a challenge. But through repeated discussions they gradually deepened their understanding, then faced the demanding task of preparing presentation materials in English.
Our time in Switzerland was filled with notable experiences, which are now wonderful memories. I repeatedly told the students, “You are the best in Japan”. That was not flattery - it was because they had seen the sites firsthand, sharpened their perspectives and built a solid foundation of knowledge. No other high school students in Japan have thought so deeply about final disposal. In this respect, they surpass many adults.
Although the students initially approached the topic with skepticism, I believe today’s presentations and Q&A sessions left the audience deeply impressed. The students themselves must now feel that their efforts were worthwhile. If more people like these students emerge, society will surely improve.
Personally, I experienced many moments of surprise during this program - moments that overturned my own assumptions. Each time, I realized what needed to change in my own approach. I strongly recommend that adults experience the role of advisor as well.
Finally, I am truly delighted to see the students’ growth reflected in their faces today. I hope they will carry forward what they have learned and pass it on to the next generation. This program is possible thanks to the dedicated support of the staff and I would like to thank you all for your hard work.

Closing Remarks

Akira Yamaguchi, President, Nuclear Waste Management Organization of Japan (NUMO)

Today’s event gave me the opportunity to learn a great deal and I found the experience highly stimulating. There are many people in attendance and I believe the interactions were both enjoyable and fulfilling for all.
I would like to explain to you what the Nuclear Waste Management Organization of Japan (NUMO) is. NUMO’s mission is to “realize safe geological disposal in harmony with local communities”. If we fail to achieve harmony with communities or ensure safety, the process will come to a halt. So, what does “harmony with local communities” and “safe geological disposal” actually mean? These are critical questions that we must carefully consider.
Several high school students mentioned the “differences in values between Japan and Switzerland”. They observed that Switzerland tends to be rational but perhaps somewhat less strict in its approach, whereas Japan is often overly cautious. However, Switzerland is not lacking in strictness. Around 1980, Switzerland had older nuclear power plants, and was the first country in the world to conduct risk assessments and implement measures to improve plant safety. Switzerland thought deeply about what safety means and directed its efforts accordingly.
We must learn from Switzerland. If there are issues with Japan’s approach, we need to devote our efforts to improvement, just as Switzerland did. I encourage you to think more deeply about the differences between the two countries and why those differences exist.
This is important because the truth cannot be discerned merely from what we see before us. Even when observing the same thing, ten people will perceive ten different realities. This is because there is no absolute truth in the world: interpretation and perspective inevitably influence what we see.
What truly matters in an attitude of “questioning” and “learning”, which form the foundation of a strong safety culture. I hope you will continue to think critically and develop further - not only to address the challenges of geological disposal but also to lead efforts in solving various issues facing Japan.
Finally, I would like to express my respect and admiration for your efforts and my sincere gratitude to those who supported the high school students. Thank you very much for organizing such an excellent presentation session.

Editor’s Postscript

Let's think together about final disposal

M E S S A G E

Yumiko Nishimoto,
Managing Director,
NPO Happy Road Net

Fourteen years have passed since the Great East Japan Earthquake and the accident at TEPCO’s Fukushima Daiichi Nuclear Power Station. At Fukushima Daiichi, trial removal of fuel debris is underway, marking the beginning of the core phase of the decommissioning process. However, the path to completion still feels long and challenging.

The training theme of this Fukushima High School Academy focuses on the final disposal of high-level radioactive waste generated by nuclear power plants - commonly referred to as “nuclear waste”. This is a critical issue that every citizen must confront, regardless of their stance on nuclear power.
Although Japan has established a policy for geological disposal, the roadmap to a final disposal site remains undecided. We must not silently defer this responsibility to future generations. Those of us who use electricity must take responsibility and act.

The fifteen high school students who participated in the program came from various regions, including Hamadori, Hokkaido (where literature surveys for final disposal are being conducted), Ibaraki and Saga prefectures (which host nuclear-related facilities) and Tokyo (a major consumer of electricity). In August, they visited facilities in Japan and Switzerland, gaining knowledge and experience beyond what can be learned in the classroom.

These students considered final disposal from a global perspective and faced this unresolved issue head-on. They raised questions, engaged in discussions with peers and consolidated their opinions. In doing so, they not only deepened their understanding of final disposal but also developed the mindset needed to tackle social challenges. At the presentation session held in September, they confidently expressed their findings in their own words.

Young people today have few opportunities to learn about issues such as final disposal, energy policy and decommissioning work. Is this an acceptable situation? We are deeply concerned about the consequences of passing unresolved problems onto future generations.

Our NPO believes it is the responsibility of adults to provide children with opportunities for awareness and, for this reason, we have continued to conduct our human resource development initiatives. There are many social issues that cannot be fully addressed within the school curriculum. Rather than turning a blind eye to them, we will continue to create educational opportunities for the sake of our future.

Inspired by the students’ willingness to take on challenges, we will keep working to provide even more opportunities for them to do so. We hope you will take this activity report as a message from the high school students themselves and join us in thinking seriously about the issue of final disposal in Japan.

Planning and Publishing

NPO Happy Road Net
Yumiko Nishimoto, Managing Director

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Summer 2026 Overseas Program for High School Students: “The Future of Nuclear Waste Disposal”

FUKUSHIMA HIGH SCHOOL ACADEMY 2026

The nonprofit organization Happy Road Net is promoting an educational program with overseas training that enables high school students to learn about the disposal of high-level radioactive waste (commonly referred to as “nuclear waste”) generated by nuclear power plants.
In 2026, participants will visit Finland, a country advanced in the field of final disposal projects. During the program, students will engage with local stakeholders and residents to learn about the site selection process and efforts to foster public understanding.
We aim to broaden participants’ perspectives by deepening their awareness of social issues.

Photo: Near the Grimsel Test Site, Switzerland, Summer 2025

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