

Documentation of the Work of the International Atomic Energy
Agency NMUN Simulation*



**National Model United Nations
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7 – 9 November 2025**

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International Atomic Energy Agency (IAEA)

Committee Staff

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Agenda

1. Managing Radioactive Waste and Its Disposal
2. Enhancing Effective National and Global Response Arrangements and Capabilities to Minimize the Impacts from Nuclear and Radiological Incidents and Emergencies

Resolutions adopted by the Committee

Code	Topic	Vote (For-Against-Abstain)
IAEA/1/1		42 in favor, 11 against, 30 abstentions
IAEA/1/2		36 in favor, 21 against, 26 abstentions
IAEA/1/3		53 in favor, 3 against, 27 abstentions
IAEA/1/4		49 in favor, 9 against, 25 abstentions
IAEA/1/5		50 in favor, 4 against, 29 abstentions
IAEA/1/6		34 in favor, 20 against, 29 abstentions
IAEA/1/7		42 in favor, 12 against, 29 abstentions

Summary Report

The International Atomic Energy Agency (IAEA) held its annual session to consider the following agenda items:

- I. Managing Radioactive Waste and Its Disposal
- II. Enhancing Effective National and Global Response Arrangements and Capabilities to Minimize the Impacts from Nuclear and Radiological Incidents and Emergencies

The session was attended by representatives of 83 Member States and 0 Observers.

On Friday, the committee adopted the agenda of I and II, beginning discussion on the topic of “Managing Radioactive Waste and Its Disposal.” By Saturday, the Dais received a total of 10 proposals covering a wide range of educational initiatives, expanding on research being done on atomic energy waste, and improving national policies. Delegates further engaged and worked collaboratively on what can be done with atomic energy waste, including building multi-national Deep Geological Repositories for storage, information and knowledge sharing, and an increase in transparency of atomic waste storage management. The atmosphere was positive, constructive, and productive.

On Sunday, 7 draft resolutions had been approved by the Dais, 0 of which had amendments. The committee adopted 7 resolutions following the voting procedure, all of which were successfully adopted with recorded votes. The resolutions represented a wide range of issues, including partially recycling spent nuclear fuel, developing more educational programs using the ARTEMIS framework, and creating specialized modules on radiation exposure, contamination control, and patient and worker safety. The resolutions emphasized effective communication, high productivity, and collaboration on these issues.

Code: IAEA/1/1

Committee: International Atomic Energy Agency

Topic: Managing Radioactive Waste and Its Disposal

The International Atomic Energy Agency,

Taking into consideration that, according to the World Nuclear Association, about 400,000 tonnes of waste have been created by reactors worldwide,

Navigating the balance between state sovereignty and international cooperation,

Deeply alarmed that only 38% of 171 Member States have the advanced functional capacities to handle radioactive waste according to the World Health Organization,

Considering General Assembly Resolution 58/40 on the prohibition of the dumping of radioactive waste,

Understanding that the dangers of nuclear waste transcend borders, and that the concerns amongst Member States are equally shared regardless of their development,

Welcoming as many Member States and demographics that are willing to ensure accessibility to the solutions and practices proposed,

Guided by the International Atomic Energy Agency (IAEA) charter, which allows for standards to be set for proper management of nuclear and radiological systems, including water quality,

Stressing the lack of permanent solutions to store radioactive waste, causing the bioaccumulation of toxins in our ecosystems and food chains,

Emphasizes the necessity of sharing modern technology built for the management of nuclear waste and restrictions on regional transportation on certain routes of travel,

Fosters an environment for Member States to find specific solutions based on their capacity, resources, and geopolitical standing, through collaboration between various Member States, existing organizations, and preexisting frameworks to create applicable practices for all,

Highlights the dangers of nuclear waste on biodiversity and the environment, such as runoff, bioaccumulation of toxins,

Reminding the issues of radioactive pollution public health, such as the death of 40,000 aquatic species after an incident involving the crash of a train carrying nuclear waste,

Requests that the IAEA expand the International Training Course on “Security of Radioactive Sources in Use and Storage” to include a wider range of Member States, allowing them to share best practices and build capacity in overseeing the safe disposal of radioactive waste,

Deeply Concerned regarding the overall environmentally harmful procedures of handling radioactive waste, and the lack of effective and sustainable structure in addressing these situations through more fundamental aspects of disposal, regarding larger cross-border data exchange and productive science-based solutions,

Acknowledging the IAEA reports that 38 cubic meters of solid nuclear waste were generated in 2022,

Considering the pressing need for permanent hazardous nuclear waste storage solutions,

Anxious about the limited exchange of knowledge and the lack of open data-sharing frameworks,

Stressing the importance of Member States to consider the short-term implications of storing radioactive waste, and to expand medical research and response capabilities to address public health challenges arising from nuclear and radiological incidents,

Seeking greater international cooperation in the safe long-term disposal of radioactive waste,

Emphasizing the importance of safe and sustainable radioactive waste management and strengthening national frameworks,

Taking note of existing non-governmental organizations (NGOs) that assist with issues related to radioactive waste such as the Office of Radiological Security, the National Waste Advisory Associates, the Nuclear Transparency Watch, and the Nuclear Waste Management Organization,

Conscious of the needs of and challenges faced by developing Member States in accessing the resources and materials necessary for storage and transportation of hazardous nuclear waste,

Recognizing further that many developing and non-nuclear Member States face challenges related to limited resources, technical capacity, and expertise in the safe management of radioactive materials,

1. *Invites* Member States to the creation of a High-Level Panel on Nuclear Waste to help advise the IAEA on what types of disposal and stabilization methods to prioritize in knowledge sharing, such as reprocessing as well as vitrification through:
 - a. Staffing with experts in radio-nuclear waste management, physicists, willing Member States, and NGOs with vested interest;
 - b. Implemented by the IAEA, and with possible funding by volunteering Member States;
 - c. With emphasis on providing resources and advice for developing Member States through a panel that occurs 7th-12th of November annually at the IAEA headquarters;
2. *Calls for* the financing of radioactive waste management to ensure transparency and continued progress with radioactive waste by:
 - a. Requesting Member States to submit and create international financial and technical reports every fiscal year on radioactive waste management;
 - b. Recommending the creation of a budgetary analysis that is supplied by the NGO such as the Alliance For Nuclear Accountability to better understand the complexities of sharing the cost of the waste management system between Member States;
3. *Uplifts* Member States to implement domestic and Regional geological caches by:
 - a. Connecting Member States to companies through the Nuclear Energy Agency in order to provide the necessary amount of data and resources;
 - b. Enforcing by existing NGOs such as Nuclear Information and Resource Service and Energy Repository and Disposal Organization);
 - c. Respecting existing State sovereignty and promoting international cooperation;

4. *Supports* the continued development of deep geological repositories as a method of long-term storage of hazardous nuclear waste through:
 - a. Advising the construction of regionally-centered deep geological nuclear waste repositories globally and providing oversight and guidance to the Member States which host these storage sites;
 - b. Proliferation of materials from “Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material” to create a framework for developing states to access resources for the safe transport and temporary storage of hazardous nuclear waste;
5. *Solemnly affirms* the importance of tending to the needs of developing Member States and their ability to transport and manage radioactive waste by working with NGOs specializing in transportation and infrastructure by:
 - a. Requesting organizations such as the Office of the Radiological Security to provide resources and apply existing, working mechanisms for developing Member States, such as the RadSecure100 program;
 - b. Supplying developing nations with the needed infrastructure to transport radioactive waste by road, rail, or sea, at the will of NGOs specializing in infrastructure, such as the Coalition for Disaster Resilient Infrastructure;
6. *Calls upon* Member States to use innovative and environmentally sustainable technology, in order to ensure that we are finding solutions to manage nuclear waste by inviting NGOs that specialize in green technology to expand upon and utilize current initiatives while charitably applying international standards by:
 - a. Inviting both the Global Energy Alliance for People and Planet and the Center for Sustainable Energy to help provide a framework and technologies to help implement this suggestion for willing Member States;
 - b. Specifying the types of technologies that have been proven to be the most optimal for NGOs and Member States, such as vitrification, digital monitoring systems, and advanced containment methods to minimize risk;
 - c. Referencing current nuclear, environmental, and humanitarian international standards to help minimize the dangers of hazardous materials and safely contain them;
7. *Further invites* Member States to voluntarily participate in the *Sustainable Management of Radioactive Waste Conference* led by an expert working group of scientists to identify and discuss research gaps by:
 - a. Utilizing blockchain-verified data for traceability of waste shipments and storage records;
 - b. Linking public health data with repository locations to prevent accidental environmental contamination;

- c. Discussing potential deployment of new reactor types and advanced fuel cycles that aim to recycle radioactive waste and effectively reduce waste volume and toxicity;
 - d. Implementation of a robust regional transportation system database with standardized regulations that is guided by the IAEA;
- 8. *Encourages* a shared database between Member States, to share innovative advancements in nuclear waste management technology and further recommends a road map agreed on regions on transportation of nuclear waste by:
 - a. Creating a database that is generally accessible to the public to show individual willing Member States' efforts to combat and responsibly manage nuclear waste;
 - b. Establishing a regional IAEA Advisory group to create protocols for nuclear transportation by:
 - i. Creating these regional networks by connecting experts and Member States through the IAEA;
 - ii. Meeting at a location chosen for each Regional Advisory Group by Member States in the group;
 - iii. Including serving experts and Member State representatives serving on the group for a period of 5 years;
 - c. Requesting funding from willing Member States, implemented and managed by the IAEA;
- 9. *Further encourages* Member States to address critical issues in radioactive waste disposal by adopting and implementing the five central aspects of The S.O.L.I.D framework which are:
 - a. Science-based solutions with deep geological disposal, which is a well-known approved method by international research, through:
 - i. Supporting research and technology sharing on safe long-term waste storage;
 - ii. Encouraging the use of proven geological sites and materials verified through international studies;
 - b. Ownership and engagement, which incorporates several practical measures including establishing complete national inventories with traceable records, publishing monitoring results in effective language, and promoting cross border data exchange where facilities are near frontiers:
 - i. The IAEA, with support from regional safety organizations, would hold technical workshops to help Member States build and maintain these inventories;
 - ii. These workshops would be held regularly beginning in 2026, allowing Member States to share progress and best practices in public engagement;

- c. Long term institutional control, which focuses on extensive monitoring periods ensuring reliable supervision, and retrieving potential future waste by:
 - i. Determining certain levels of environmental harm and types of waste;
 - ii. Organizing adequate amounts of monitoring time, which can range from a few months to hundreds of years;
 - iii. Identifying the creation of a task force which reviews the quality of water reserves around nuclear approved reactors and reports their reviews to the IAEA as a remedy to a specific, high-level environmental harm;
 - iv. Requesting NGOs and regional bodies such as WaterAid and The Nature Conservancy to comprise the task force using willing members and experts already associated with the respective NGO;
 - v. Recommending the task force to conduct reports of water quality in reserves every three months after their initial establishment;
 - vi. Reassure potentially hesitant Member States of the impartiality and morality prioritized by the task force;
 - d. Deep geological repository, which is primarily designed to provide a passive, final barrier, reflecting the empirical evidence that this effective solution for high-level waste presents and providing alternative spaces in which these wastes can be stored, preventing the degradation and harm of easily affected surface environmental areas;
10. *Recommends* the creation of SAFE: Secure Archives of Future Evidence which is:
- a. An added module to the IAEA archives based on regional networks like AFRA-NEST that spreads best practices and knowledge through:
 - i. Organizing annual meetings within the regional network that address concerns regarding the storage of radioactive waste;
 - ii. Building a standard database that is publicly accessible in order to spread knowledge of best practices for disposing of radioactive waste;
 - iii. Standardized regular testing that is done by the IAEA;
 - b. Establish an advisory council under the IAEA in collaboration with region organizations such as the European Union, and the African Union, along with NGOs such as the Nuclear Innovation Alliance, the Nuclear Threat Initiative, and the Institute of Nuclear Material Management:
 - i. IAEA and State funded secure, multilingual, and open-access digital platforms for all Member States to preserve and share essential documentation on repository safety;
 - ii. Backed by experts, think-tanks, universities, and researchers to keep the most accurate up to date data in the archives;
11. *Further encourages* Member States to advance training and capacity in nuclear medicine, radiation oncology, and medical physics while supporting IAEA initiatives by:

- a. Supporting organizations such as Rays of Hope and Atoms4Food to expand the peaceful uses of nuclear science in healthcare and medical research to protect public health and strengthen global resilience;
 - b. Conducting frequent training sessions for operators, researchers, first responders, and other medical staff to provide them with adequate mechanisms and competencies to carry out these initiatives;
- 12. *Further advises* Member States on nuclear safety strengthening methods whilst prioritizing the protection of workers, the public, and the environment from preventable radiation exposure and risk through the implementation of occupational radiation protection programs and emergency plans:
 - a. Encouraging Member States to contribute to the Conference of Radiation Control Program Directors in order to help standardize regulations for local programs in their protection against radiation, creating coherence and widespread safety protocols;
 - b. Recommending Member States to apply the *Use in Preparedness and Response for a Nuclear or Radiological Emergency (GSG-2)* and *Operational Intervention Levels for Reactor Emergencies (EPR-NPP-OILs)* to mend gaps in the IAEA's Emergency Preparedness Responses framework;
- 13. *Draws attention* to IAEA's e-learning courses such as "Fuel and Radioactive Waste Management" and "Introduction to Medical Preparedness and Response to Radiation Emergencies," to strengthen global radio-nuclear safety and emergency preparedness policies and mechanisms by:
 - a. Offering a certification system with refresher courses or more advanced training modules, ensuring Member States are continuing to learn and keep international actors updated with the latest safety standards and technology;
 - b. Creating interactive virtual simulations where Member States and other participants practice responding to radiation emergency or managing nuclear waste incidents;
- 14. *Advises* the development of the High-Level Waste Expert Group to discuss the long-term stability of deep geological repositories (DGR's) to store high-level waste through:
 - a. Grouping comprised of geologists, nuclear engineers, nuclear regulatory authorities/safety specialists, willing Member States, and NGOs, who would discuss the long-term implications of storing high-level waste in DGRs;
 - b. Meeting quarterly to discuss the topics at hand for as long as the IAEA will continue to fund this expert group;
 - c. Requesting funding and implementation from the IAEA because of this organization's heavy cooperation on the topic;
- 15. *Promotes* the need for the proper dismantling of nuclear storage sites and infrastructure across the globe to transition from old regulations to current ones by:
 - a. Drawing attention to the need for management of post-crisis rehabilitation of these damaged nuclear facilities and infrastructure through collaboration of all voluntary Member States;

- b. Ensuring that hazardous materials are safely contained and disposed of according to current international standards.

Code: IAEA/1/2

Committee: International Atomic Energy Agency

Topic: Managing Radioactive Waste and Its Disposal

The International Atomic Energy Agency,

Cognizant of ensuring safe transportation of nuclear materials, a key factor in maintaining a healthy and livable environment,

Supporting fully the existing training established by the International Atomic Energy Agency (IAEA) for training nuclear states on the safe management of radioactive material and promoting increased support and education for Member States,

Emphasizing IAEA's resolution, GC(42)/RES/13 on the "Safety of Transport of Radioactive Materials," to adhere Member States to prioritize high levels of safety during the transport of radioactive material,

Acknowledging the significant amount of nuclear material transportation in the Ibero-American region, specifically within the Panama Canal,

Concerned with the increasing risk of radioactive waste-related incidents that could lead to significant damage to the environment within the region, which causes generational, potentially irreparable damage,

Seeking Member States who are willing to create a regional organization emphasizing the significance of nuclear waste transportation globally and the regulations therein,

Calling attention to the continued furtherment of tracking and transparent ownership of nuclear materials that are transported through the Ibero-American region, building on the current foundations while preventing unauthorized or unsafe transport,

Noting the effective communication and collaboration already in practice with the Ibero-American Forum of Radiological and Nuclear Regulatory Bodies and the *Regional Cooperation Agreement for the Promotion of Nuclear Science and Technology in Latin America and the Caribbean* (ARCAL), and recognizing the importance of building upon and expanding these efforts to further strengthen international cooperation,

Recognizing the potential for environmental impacts from the transportation of nuclear materials, in particular, the potential for groundwater contamination affecting both indigenous communities and native species,

Profoundly concerned that preexisting frameworks lack adequacy to prevent the illegal dumping of nuclear waste throughout developing countries waterways, therefore continually perpetuating the suffering of developing nations,

Affirming the right for individual states' sovereignty within the Ibero-American Committee of Nuclear Transportation Safety (INTS) to regulate and defend their legally recognized territory or maritime borders,

1. *Recommends* the establishment of INTS to evaluate regional nuclear transportation safety standards every five years by:
 - a. Inviting all Member States of the Ibero-American region;
 - i. Representatives from the states of Bolivia, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras,

Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Uruguay, Venezuela, and Brazil;

- ii. Establishing the council of 20 Member States, which would be tasked with reviewing the transportation and safety of radiological material within the Ibero-American region;
- iii. Shall be a Chair and Vice-Chair (President and Vice-President) of INTS, rotating among the 20 Member States of INTS on a five-year basis when the committee meets:
 - 1. The Chair of INTS will rotate on an English alphabetical order of the Member States' names and assume the role on the year INTS meets;
 - 2. The Vice Chair of INTS shall be appointed by consensus of Member States, ensuring regional balance;
- b. Creating five guest Member States to join the INTS, to support global knowledge sharing:
 - i. Guest Member States will rotate within the review of safety standards every annual conference;
 - ii. Guest states reserve the ability to spectate the conference and submit independent reports from the guest delegations' states respectively;
 - iii. Three guest Member States would be invited from developing nuclear states, whereas the remaining two guests will be invited from developed nuclear states;
- c. Encouraging Member States of this council to consent to the authority of the Ibero-American Nuclear Transportation Safety:
 - i. Member States could consent for the INTS to inspect the enforcement and regulations Member States agreed upon through the agreement of the organization;
 - ii. Member States could consent for the INTS to advise state actions upon crises regarding the integrity of the organization;
- d. Addressing the regionally specific safety standards that are built upon those already in place, IAEA standards such as the *IAEA Safety Standards Series No. SSR-6, Regulations for the Safe Transport of Radioactive Materials*:
 - i. Developing further methods for the safe sealing of nuclear waste containers, and the outer vessels they travel within, with respect to the potential for exposure to tropical storms while travelling through the Ibero-American region via container ships;
 - ii. Calling for any transportation of nuclear waste within the INTS to maintain certified nuclear technicians within the crews transporting these radiological materials;

- iii. Requesting Member States across the Ibero-American region to share their standard practices regarding nuclear industries, which would be facilitated at regional conferences endorsed by the INTS;
 - iv. Maintaining manufacturing standards for nuclear waste vessels within the consenting Member States of the INTS during inspections of production operations, ensuring compliance with standards;
 - v. Encouraging environmental monitoring methods, such as groundwater contamination levels, is encouraged to be upheld;
 - vi. Monitoring of the quantity and or volume of nuclear materials, from consenting Member States, being transported through the region to ensure that none are illegally dumped into the waterways or environment;
- e. Reviewing, updating and voting on the INTS safety standard is a key role of Member States that form part of this committee:
 - i. Encouraging consenting States to agree upon INTS inspections of Member States' enforcement of INTS regulations and codes;
 - ii. Endorsing individual Member States' ability to consent to inspection, and respects the ability to revoke consent to inspections at any time;
- 2. *Suggests* that Member States could make efforts to comply with the IAEA resolution GC(42)/RES/13, which encourages the use of peer-reviewed appraisals with implementation of the Transport Regulations for radioactive waste transportation through:
 - a. Expanding the TranSAS appraisal system under project number RLA/9/044 allows any requesting State to meet the expectations of transporting radioactive material across the Ibero-American region;
 - b. Creating a detailed TranSAS questionnaire ensuring a consistent appraisal process across key areas such as legislation, regulatory authority, authorization, assessment, enforcement, regulation development, emergency preparedness, and maritime operations by:
 - i. Serving of this TranSAS questionnaire would be based on a bi-yearly basis, facilitated by regional representatives of the INTS and individual states' public research institutions;
 - ii. Reviewing results taken from this questionnaire would be transparently offered to all Member States of INTS to view, any recommendations drawn from these questionnaires will be suggested to be applied to all examples found within the INTS;
- 3. *Asks* non-Member States of INTS to, where possible, to apply INTS's transportation supplemental regulations, particularly nuclear cargo guidelines, across the Ibero-American region by:
 - a. Providing these non-Member States with support and education on the additional safety methods applied by the INTS by:

- i. Encouraging training in our additional methods of communication that INTS Member States deploy;
 - ii. Calling for educational materials to be provided to those Member States that wish to apply these standards within the Ibero-American region;
 - b. Offering non-Member States training and support without cost to themselves, as this funding will be provided by the INTS by:
 - i. Funding will be allocated from the central IAEA fund to the INTS as approved by the IAEA General Conference, with regular oversight provided by the IAEA;
 - ii. Endorsing funding to originate from invited INTS Member States, Non-Government Organisations, and private entities that share the same goals as the INTS;
 - iii. Allocating funds would be provided with oversight by a board of Member States established at the five-year meeting of the INTS positions on this board would be subject to a vote by Member States of the INTS;
- 4. *Welcomes* Member States within INTS to increase their communication with each other, in response to movements of nuclear materials within their own sovereign borders through:
 - a. Embedding a communication platform within INTS to encourage Member States to share transparently the movements of nuclear waste within their own borders and reaffirms the platform to be built upon the existing framework established within GSG-6 on communication with a regulatory body set out by the IAEA;
 - b. Providing the INTS with clear tracking of materials allows its Member States to be better prepared and support its members in the event of mishandling of these nuclear materials;
- 5. *Emphasizes* working alongside the Panama Canal Authority (PCA) to enhance collaboration and communication in evaluating regulations and procedures regarding the transport of radioactive material through the Panama Canal by:
 - a. Integrating the PCA into the TranSAS organization of communication with Member States;
 - b. Inviting national and regional regulatory bodies such as PCA, ARCAL and FORUM to INTS to assess existing safety protocols and increase communication across cross-border regions;
- 6. *Recommends further* funding and deployment of the Spent Fuel and Radioactive Waste Information System (SRIS) within the Ibero-American region, as a tool to support the work of INTS by:
 - a. Encouraging Member States who wish to transport materials through this region to join the SRIS database and be active in updating their nuclear waste materials' information;

- b. Developing a regional body that oversees the specific tracking of materials through the region via the SRIS through:
 - i. Rotating the Member States that oversee this every two years are taken from within the INTS members;
 - ii. Creating monthly reporting that enables clear tracking of materials specifically travelling through the Ibero-American region;
- 7. *Further requests* transparency between Member States of INTS and the entities transporting nuclear material within its jurisdiction by reporting all radioactive material stored or transported to INTS by utilizing the SRIS through:
 - a. Expecting INTS to consistently monitor radioactive material through the SRIS and also ensure that Member States are properly and truthfully reporting the transport and storage of radioactive material;
 - b. Empowering nuclear institutions within the Ibero-American region to adhere to the regulations of monitoring, as well as the safeguards that would be put in place;
- 8. *Encourages* collaboration between Member States' individual public research institutions within the Ibero-American region, such as the Peruvian Institute of Nuclear Energy (IPEN) by:
 - a. Inviting public research institutions such as IPEN as advisory members to INTS to enhance communication between Member States apart from and not a part of INTS;
 - b. Encouraging Member States in cross-border transportation to collaborate with state institutions to ensure that regulations are followed and risks are minimized;
 - c. Emphasizing the importance of institutions in the Ibero-American region that are members of INTS, to commit to providing all-around support, including technology and research;
- 9. *Welcomes* the findings and work produced by the INTS to be applied to any other region or Member State of the IAEA, in response to strengthening the safety of transportation of nuclear materials and waste through:
 - a. Providing transparency and openness on the failures and successes of the INTS with any Member State that asks to access the data, safety standards or advisories created by the INTS;
 - b. Working with any Member State that wishes to further their standards of transportation in encouraging collaboration and creation of a similar entity to that of the INTS.

Code: IAEA/1/3

Committee: International Atomic Energy Agency

Topic: Managing Radioactive Waste and Its Disposal

The International Atomic Energy Agency,

Desiring shared information between International Atomic Energy Agency (IAEA) Member States on managing and disposing of nuclear waste to have a more comprehensive global approach,

Reaffirming the role of education and research as essential tools in fulfilling the Sustainable Development Goals (SDGs) 4 “Quality Education”, 9 “Industry, Innovation and Infrastructure”, and 12 “Responsible Consumption and Production” to ensure the proper management of nuclear waste,

Aware of the lack of sustainable methods of managing the tons of high-level radioactive waste,

Mindful of the current developments and innovations in the field of nuclear waste management, such as the construction of deep geological repositories and interim storage systems, to promote holistic knowledge sharing among Member States,

Calling attention to the harmful role to the environment and public health certain private institutions play in the dumping of radioactive waste as private institutions are responsible for 86% of illegal non-nuclear radioactive dumping,

Acknowledges nuclear power as an important factor in energy production and research, while recognizing the need to properly dispose of radioactive waste,

Concerned for nuclear development formed without proper advice, resulting in less efficient nuclear plants and increasing inefficiency in producing nuclear waste,

Examining the findings and research of the Nuclear Energy Agency on the topic concerning Management and Disposal of High-Level Radioactive Waste: Global Progress and Solutions, focusing on the suitable host rocks for Deep Geological Repositories and the ability to safely transport them,

Observing the necessity for accurate and competent studies, training, and technical data in pursuit of the safe disposal of radioactive waste,

Realizes the necessity of increased funding for research into long-term storage options resistant to cracking and deterioration in order to protect shrinking groundwater reserves around the world,

Alarmed by the degenerative effect that improper disposal of radio-nuclear waste has on surrounding groundwater aquifers,

Recognizing the dangers of transporting radioactive waste, such as potential spills from mobile transport, public/environmental contamination, and public interference,

Emphasizing the importance of sharing access to data monitoring systems on disposal technology for the protection of current and future generations in disposing of radioactive waste to achieve SDG 17, “Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development,” of revitalizing global partnerships to ensure innovative technological development,

1. *Encourages* the establishment of an effective IAEA Nuclear Education and Expertise Sharing (NEXUS) network to connect university departments and research centers by:

- a. Understanding chemical handling protocol with a specific emphasis on disposal protocols such as deep geological repositories;
 - b. Sharing radioactive waste management research, specifically on safer technological disposal alternatives;
 - c. Preventing nuclear emergencies through the suggestion of proactive policies and procedures;
 - d. Continuing to share knowledge pertaining to radioactive waste and its components, risks and responsibilities, furthering the integration of education systems across Member States;
2. *Proposes* the creation of the Center for Learning, Exchange, and Assessment of Repositories (CLEAR) by:
- a. Serving as an IAEA-led global hub for knowledge sharing, practical training, and peer review processes to provide all Member States, regardless of their level of development or resources, with technical inputs, case studies, and hosting opportunities for training exercises;
 - b. Responding to the direct requests for support from CLEAR and the Waste Safety Standards Committee (WASSC) by Member States seeking to improve the management of their radioactive waste;
 - c. Assisting participatory Member States in the collection of their radioactive waste data to update the Spent Fuel and Radioactive Waste Information System annually to further the goal of safe radioactive waste management;
 - d. Requesting funding through the Technical Cooperation Fund, utilizing voluntary contributions from Member States and international organizations;
 - e. Having an annual evaluation of a participatory Member State's nuclear waste disposal by the WASSC to ensure effective cooperation as well as track the various levels of implementation of the best practices recommended by CLEAR;
3. *Invites* collaboration between multiple research institutions to discover additional methods to reduce the half-life of radioactive isotopes in order to quickly repurpose otherwise dangerous material by advocating for research studies in said areas and the transference of data and knowledge;
4. *Recommends* the establishment of an advisory board within the charter of the IAEA to work with developing nations in the development of nuclear facilities in support of sustainable radioactive waste management strategies by:
- a. Making information relevant to the development of efficient nuclear facilities accessible to those states who wish to engage in such development;
 - b. Recognizing the responsibility of the IAEA in encouraging the development of quality nuclear facilities;
 - c. Providing consulting services to aid in the development of international nuclear facilities in order to actively promote the development of facilities that utilize resources and operate in conjunction with the "NEXUS" organization noted in the first operative clause;

5. *Reimplementing* previous precedents of the IAEA's nuclear safety reviews clause B on "Strengthening Radiation, Transport, and Waste Safety" emphasizing regional workshops on design safety, inspection transporting packages, and containing radioactive material;
6. *Suggests* the establishment of educational initiatives for all Member States to address questions and concerns regarding radioactive waste and management due to unexpected incidents to strengthen national waste programs;
7. *Emphasizes* the need for regional, centralized, and supervised storage of nuclear waste managed by supranational organizations that allows all Member States to properly dispose of radioactive material in a designated area, voted upon common agenda, in line with IAEA and international regulations;
8. *Further encourages* Member States to contribute to non-sensitive case studies, training materials, and technical data to an IAEA-managed open-learning platform to promote transparency and equitable access to the public through a voluntary mutual exchange of information;
9. *Calls upon* all Member States to encourage the development of a fund through Article III B.2. in the IAEA charter dedicated to advancing research efforts regarding the longevity of radiological waste disposal facilities by:
 - a. Encouraging the prioritization of ground water preservation through the development of more efficient storage options resistant to leakage;
 - b. Working in tandem with the "NEXUS" professionals in encouraging research institutions in promoting projects tied to the longevity of radiological waste storage;
10. *Further recommends* collaborating with the United Nations Water Conference program to support initiatives aimed at protecting groundwater reservoirs from contamination created by radionuclides, in alignment with the IAEA's efforts to achieve SDG 6, "Clean and Sustainable Water and Sanitation for All," ensuring the availability and sustainable management of water and sanitation for all;
11. *Requests* Member States to utilize nuclear technology to efficiently monitor radioactive contamination of water and support sustainability efforts in alignment with the United Nations Water Action Decade to decrease the potential radioactive contamination of water caused by improper disposal of radio-nuclear waste though:
 - a. Testing suspected bodies of water for radiation above normal levels;
 - b. Researching and implementing effective, proven solutions such as those found in the IAEA's report "Radiation Treatment of Polluted Water and Wastewater;"
12. *Urges* Member States qualified to host deep geological repository sites to be open to collaboration with state actors not qualified to host radioactive and nuclear waste by:
 - a. Encouraging Member States to provide research and financial assistance to member states qualified to host a deep geological repository site;
 - b. Considering the alternatives proposed by the Nuclear Energy Agency regarding suitable host rock types for deep geological repositories such as granite and salt;
13. *Supports* allowing private institutions such as medical imaging companies, fertilizer production companies, sand mining operations, etc. access to deep geological repositories;

14. *Further requests* funding from the Technical Cooperation Programme be allocated towards strengthening the development of repositories, knowledge sharing systems, technical assistance measures, and research into long-term nuclear waste storage by:
- a. Encouraging Member States to utilize financial and educational initiatives to incentivize employment in decommissioning to ensure the safe decommissioning of reactors;
 - b. Recommending collaboration with the IAEA in providing training programs and technical certification opportunities for workers as a direct means to modernize and keep up with international demand for nuclear materials;
 - c. Advocating for implementation through the IAEA to ensure proper distribution of funding into programs which require assistance in the development of repositories;
15. *Endorses* the use of Integrated Geospatial Information Framework in exchanging information on infrastructure advancement to strengthen the international capacity for long-term storage and safe disposal of nuclear materials;
16. *Notes* the dangers of transporting radioactive waste, such as potential spills from mobile transport, public/environmental contamination, and public interference by:
- a. Calling attention to existing IAEA standards found in Sections 5 and 6 of the "Regulations for the Safe Transport of Radioactive Material" to ensure that the transport of nuclear and radiological waste remains free of a breach or leak of radioactive material;
 - b. Recommending Member States follow IAEA Safety Standards for selecting disposal sites as outlined in Articles 6 and 13 of the *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management*.

Code: IAEA/1/4

Committee: International Atomic Energy Agency

Topic: Managing Radioactive Waste and its Disposal

The International Atomic Energy Agency,

Alarmed by examples of permanent ecological damage caused by irresponsible nuclear waste disposal in developing civil nuclear programs,

Fully aware that Member States with developing civil nuclear power sectors struggle to safely exchange radioactive waste necessary to develop a nuclear energy program, exacerbating the risk of unsafe practices when it comes to the handling of radiological waste,

Recognizing advancements in the scientific field, specifically the United Kingdom National Nuclear Laboratory and Canadian Nuclear Laboratories, to transition high-level radioactive waste into effective forms of cancer therapy,

Considering the lack of nuclear research capabilities in the Global South and the need for developing nuclear waste policies, as well as the demand for environmentally conscious methods of nuclear waste disposal,

Calling upon Member States to expand and institutionalize technical cooperation with the International Atomic Energy Agency (IAEA) by integrating national nuclear safety programs into existing International IAEA frameworks, particularly through the Technical Cooperation Program and the Integrated Regulatory Review Service with emphasis on developing regions,

Acknowledging that developing Member States do not have national comprehensive regulatory frameworks and safety standards in place to mitigate nuclear waste negatively affecting the Member State and populations as a whole,

Alarmed by the insufficient measures and procedures currently in place to properly manage the disposal of radioactive waste, and to provide a framework that protects workers in fields related to medicine and mining,

Desiring an effective procedure that will reuse and recycle nuclear waste to benefit the radiopharmaceutical industry,

Fully aware that Member States with developing civil nuclear and radiological sectors struggle to comply with the IAEA General Safety Guide on Occupational Radiation Protection (No. GSG-7) because they lack the domestic regulatory monitoring capacity necessary to ensure the occupational health safety, including physical and mental, of laborers in fields exposed to radiation, such as medical imaging, radiotherapy, industrial radiography, and mining,

Alarmed by the insufficient measures and procedures that are currently in place to properly manage the disposal of radioactive waste, and to provide a framework for occupational radiological health safety that aims to protect those who work in the uranium mining industry,

Considering the respiratory health complications for workers who are dealing with radioactive waste and the need for strict safety precautions to protect their long-term health,

Having observed the success of the *Basic Policy on handling of Advanced Liquid Processing System* treated water stored at the Fukushima Daiichi Nuclear Power Station,

Recognizing the Australia, United Kingdom, and United State's trilateral security partnership, known as AUKUS, success in addressing occupational, environmental, and public health considerations associated with nuclear-powered naval propulsion,

Keeping in mind the great risk taken by professionals exposed to high doses of radiation while managing nuclear waste,

Expressing appreciation for the formation of the Occupational Radiation Protection Appraisal Service (ORPAS) as an independent appraisal service in the field of radiation protection of workers, as provided by the IAEA,

Conscious of the consequences of the higher risk of human error in waste disposal and management of radiation workers due to a lack of proper mental and physical health support and training,

Keeping in mind the expenses associated with assisting developing Member States with the management of radioactive waste and the limited scope of the IAEA's preexisting fundraising mechanisms and corresponding services,

1. *Calls for* Member States to engage in more comprehensive technology sharing under the purview of the IAEA Department of Technical Cooperation, specifically focusing on remediating illegal nuclear waste dumping and monazite contamination by:
 - a. Recommending that monazite contamination through rare earth element processing be considered a sub-priority under health and safety within the Technical Cooperation Programme's technology transfer purview;
 - b. Encouraging Member States with national or regional projects related to de-contamination to deliver further technical cooperation support through cross-border capacity building efforts;
2. *Has resolved* to amend the IAEA's *Guidance on the Import and Export of Radioactive Sources* (2012) to facilitate the safe and responsible exchange of radioactive waste from Member States with access to domestic nuclear power production to Member States with developing nuclear energy programs and waste containment capacity that may lack the regulatory and public health capacity to safely and responsibly receive and store radioactive waste;
3. *Urges* Member States to assist underdeveloped Member States in establishing and building radiotherapeutic research industries by:
 - a. Working to cultivate juvenile research programs in the Global South that will work to turn radioactive waste into forms of chemotherapy and other radiotherapeutic treatments;
 - b. Creating partnerships with Member States that are looking to grow their radiotherapeutic capabilities;
 - c. Assisting Member States with underdeveloped research programs to turn high-level nuclear waste into effective forms of cancer therapy;
4. *Proposes* the establishment of an International Coordination Hub for radioactive waste management by:
 - a. Operating under the guidance and standards of the IAEA Commission such as the *Joint Convention on the Safety of Spent Fuel Management*, the *General Safety Requirements Part 5* and the *IAEA TECDOC n. 1357*;

- b. Serving as an operational mechanism that translates the aforementioned guidelines into operational cooperation and capacity building, particularly for non-nuclear and developing Member States that lack the resources to fully comply with guideline criteria;
 - c. Acting as a platform to connect existing regional frameworks and creates an inclusive international space for information exchange, joint training programs and technology sharing across borders;
- 5. *Recommends* that Member States adopt safety standards and precautions concerning the proximity of workers exposed to radiological waste in order to protect their respiratory health by:
 - a. Updating radioactive waste management protocols to recommend the use of High Efficiency Particulate Air (HEPA) filtration systems in all facilities managing, transporting, or disposing of radiological waste;
 - b. Sponsoring workshops, research projects, and international training programs led by Member States with advanced nuclear expertise, such as Japan, to teach workers how to install, maintain, and monitor HEPA filtration systems effectively;
- 6. *Has resolved* to create an International Dose Registry (IDR) administered by the Occupational Radiation Protection Networks (ORPNET), accessible to Member States who may voluntarily join the registry, to individually monitor exposure to radioactive waste and collect radiation dosage data of laborers exposed to radioactive waste as a part of their job by:
 - a. Integrating data already recorded by IDR member countries' existing National Dose Registries to achieve parity between domestic and global monitoring;
 - b. Encouraging the voluntary sharing of personal, employment, and dosimetric data between national occupational radiation protection programmes to ensure the safety of radiologically exposed workers laboring in multiple Member States;
- 7. *Recommends* that the IAEA and its Member States create a regulatory framework to assist in limiting the effects of radioactive waste from mines, specifically those that extract uranium and plutonium, by:
 - a. Developing policies that provide access to cardiovascular health resources for laborers exposed to radioactive waste while working in underground uranium mines;
 - b. Encouraging miners in participating Member States to engage in training that informs workers of IAEA safety protocols for handling radioactive waste and the implications of their occupation;
 - c. Establishing regulations that set radioactive waste exploration limits for underground uranium miners to minimize the long-term health risks;
 - d. Requesting that Member States conduct environmental impact assessments and environmental monitoring throughout the life cycle of any such mine facility;
- 8. *Recommends* that the IAEA and its Member States build upon the development of *Health and Environmental Aspects of Nuclear Fuel Cycle Facilities: 1996* to minimize the physiological danger presented by the storage and transport of radioactive waste under IAEA guidance by:

- a. Establishing standardized radiological water and soil surveillance protocols based on IAEA *Safety Standards GSG-8: Radiation Protection of the Public and the Environment*, specifically for zones within a certain kilometer radius of nuclear-powered naval docking sites and interim waste holding facilities, with samples sent to the IAEA Radiation Monitoring Data Exchange Platform;
 - b. Expanding occupational health protections for naval personnel by requiring personal dosimeters tracked through the IAEA Information System on Occupational Exposure, annual body dose screenings in line with the IAEA GSG-7 Occupational Radiation Protection and confidential mental health support adjusted to the Response and Assistance Network guidelines;
 - c. Implementing community health outreach in coastal and island regions by providing local clinics with training through the IAEA Human Health Campus radiation modules, in order to distribute risk communication materials in line with the recommendations outlined in *Communication with the Public in a Nuclear or Radiological Emergency* (2012);
9. *Calls upon* Member States to develop training guidelines that encompass the physical and mental well-being of radiation workers to ensure that radioactive waste is managed effectively by:
 - a. Encouraging Member States to facilitate the responsible management and disposal of radiological waste by requiring training of workers exposed to radiation that protects their physical and mental well-being;
 - b. Inviting Member States to complete required hours of training guidelines throughout their careers in waste management and disposal;
 - c. Including training modules that prepare first responders and emergency aid to people facing occupational hazards while managing waste;
10. *Resolves* to assist Member States with compliance with preexisting IAEA occupational health safety standards as enforced by the ORPAS by:
 - a. Requesting that ORPAS missions identify areas for improvement and provide actionable recommendations to enhance national frameworks and practices;
 - b. Reporting periodically on the outcomes and impact of ORPAS missions to the Board of Governors and relevant committees;
 - c. Supporting Member States in implementing ORPAS recommendations and facilitating follow-up activities where needed;
11. *Calls for* the expansion of programs such as the Peaceful Uses Initiative and to expand the scope of the Peaceful Uses Initiatives to both solicit more donations and improve upon the utility of the IAEA by:
 - a. Requiring IDR Member States to contribute dues to ORPNET proportional to the data entered to finance the global monitoring capacity necessary to conduct IDR operations;
 - b. Encouraging Member States to make voluntary contributions to extrabudgetary funding to promote research in developing Member States;

- c. Calling upon Member States to make voluntary contributions towards building research capabilities in underdeveloped Member States to turn radioactive waste into radiopharmaceutical medicines;
- d. Appealing to Member States to make voluntary contributions to support mine workers in both mental and physical well-being;
- e. Extending funding to Member States focused on growing their research capabilities to match those of the Global North.

Code: IAEA/1/5

Committee: International Atomic Energy Agency

Topic: Managing Radioactive Waste and Its Disposal

The International Atomic Energy Agency,

Recalling the General Assembly Resolution 79/55 calling for the maintenance of security on radioactive sources,

Affirming the 2030 Agenda for Sustainable Development Goals (SDG) 7 on Affordable and Clean Energy,

Reiterating the importance of the International Atomic Energy Agency's (IAEA) safety review systems, such as the Corporate Operational Safety Review Team (OSART),

Confident in the Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS),

Having considered that mismanagement of radioactive waste originating from nuclear facilities poses a danger to public safety, with potential for radiation poisoning and harmful emissions into air and water supplies,

Alarmed by the lack of sustainable solutions for the management of radioactive material,

Acknowledging the previous efforts made by Member States to educate about geological landscapes suitable for nuclear repositories,

Aware of the need for Member States to have secure and sustainable disposal facilities for nuclear waste,

Determined to engage cooperatively with Member States to establish regional centers for proper disposal,

Having studied the *National Agency for Radioactive Waste Management (ANDRA)* and its commitment to managing radioactive waste sustainably,

Stressing the importance of accountability for State and non-State actors regarding radioactive waste production, disposal, and impact,

Appreciating the effectiveness of regional nuclear education programs such as the African Network for Education in Nuclear Science and Technology (AFRA-Nest) and the Latin American Network for Education in Nuclear Technology (LANENT),

Noting the limited educational resources available for nuclear energy scientists and security officials in the regions of the Middle East and North Africa,

Emphasizing the necessity of transparency and public awareness about nuclear waste, its impacts, and the work of the Nuclear Security Training and Demonstration Center's (NSTDC) prior work on the issue,

Bearing in mind the disadvantages developing Member States faced with funding, capacity, and infrastructure,

Appreciating the research done into bioremediation strategies for handling the radioactivity of Low-Level Waste,

Recognizing the fundamental work of the IAEA's International Low-Level Waste Disposal Network (DISPONET) in managing situations where low-level waste has been improperly disposed of,

Realizing that the *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* (1997) established strict safety standards on radioactive waste management, but that it does not provide a mechanism to evaluate innovative waste disposal strategies like Deep Geological Repositories (DGRs),

1. *Trusts* the financial support of the pre-existing IAEA funding system to monetarily support the expansion of initiatives on educational development, knowledge sharing, capacity building, transportation security, and the development of sustainable radioactive waste management facilities by:
 - a. Continuing the encouragement of voluntary donations from Member States and non-Member State donors;
 - b. Reaffirming the utilization of the Technical Cooperation Fund, the Regular Budget Fund, and the Extrabudgetary Programme Fund;
2. *Encourages* the expansion of existing site-selection frameworks through national nuclear agencies such as the Canadian Nuclear Safety Commission (CNSC) and the French Authority for Nuclear Safety and Radiation Protection (ASNR) by:
 - a. Integrating data from these and other major agencies to facilitate universal processes adaptable to each Member State's unique environmental situation;
 - b. Building procedures using discovered best practices to globally equip Member States to find optimal sites for regional repositories to facilitate better construction;
3. *Reaffirms* international commitment to interacting and contributing to the IAEA resources and safety checks under pre-existing OSART teams and ARTEMIS expert peer reviewers by:
 - a. Suggesting strongly the incorporation of increasing the frequency of safety checks by OSART maintaining access to nuclear reactors and research and waste management facilities, emphasizing the focus on supporting the achievement of an international level of safety with faith in the credibility of the IAEA;
 - b. Encouraging Member States to publish results in conjunction with peer review teams onto the ARTEMIS database in order to facilitate knowledge sharing;
 - c. Requesting a standardization of information before being published publicly and the collaboration between OSART and ARTEMIS safety review experts to produce a standardized guideline on the behest of IAEA research experts;
4. *Suggests* ANDRA's mission of sustainable radioactive waste management and extensive nation-specific research facilities be adopted by Member States through IAEA office branches in willing nuclear states by:
 - a. Encouraging Member States to interact with existing IAEA tools, such as OSART, to establish secure safety guidelines to a level of international safety while

simultaneously embracing the mission of ANDRA, long-term sustainability and transparency;

- b. Focusing on collaboration between IAEA radioactive waste management experts and nation-appointed delegates to produce waste management solutions and standardized result reports that are Member State-specific and easily implementable;
 - c. Reiterating that result reports will focus upon the progression of IAEA branches in nuclear States, emphasizing the sustainable development of waste management facilities;
 - d. Emphasizing knowledge-sharing and collaboration under these IAEA branches and standardized result report systems that can move waste management solutions, research, and ideas from advanced nuclear states to developing nuclear States;
 - e. Implementing results, research, and progress of waste management facilities for Member States to be published on ARTEMIS;
5. *Encourages* the expansion of the Incident and Trafficking Database (ITDB) framework for broader information sharing of the transportation of radioactive waste by:
- a. Including additional data on non-proliferation related to incidents such as loss of containment;
 - b. Improving coordination between regional powers, ensuring a consistent standard and interoperability;
6. *Reinforces* the continuous scientific and scholarly research of geological processes and deposition of regional and global sites suitable for the storage capability of nuclear waste by:
- a. Collaborating with local geoscientists to accurately and confidently choose the correct depositional site;
 - b. Studying regional and global geological depositions and formations with core drilling and mineral identification from voluntary public landscapes;
7. *Commits* to strengthening international and regional information-sharing efforts and encourages building on them through full utilization of knowledge experts on the OSART tool by:
- a. Evaluating the African Regional Co-operative Agreement for Research, Development and Training related to Nuclear Science and Technology by publishing results transparently to the OSART review team;
 - b. Assessing the success of the Regional Cooperative Agreement for the Promotion of Nuclear Science and Technology in Latin America and the Caribbean (ARCAL) by publishing results transparently to the OSART review team;
 - c. Developing safe communication networks for Member States to share their research and collaborate on solutions and discoveries to further develop nuclear research and knowledge;
8. *Further invites* Member States to initiate voluntary dialogue on potential Regional Nuclear Disposal Centers and the routes of transportation between them with specific transparent monitoring systems by:

- a. Expanding the work of DISPONET, emphasizing the cooperation of Member States during the transit of radioactive material;
 - b. Reiterating the importance of ensuring the implementation of the regulation of radioactive materials being transported pursuant to the Regulations for the Safe Transport of Radioactive Material;
 - c. Monitoring radioactive waste through the use of the Commission on Safety Standards (CSS) quantities and destinations when moving between borders, disclosing weight at both shipping point and destination, with the goal of monitoring disposal sites;
9. *Declares* the need for radioactive waste disposal sites to adhere to guidelines, in line with IAEA Safety Standards Series no. SSR-5, doing so through:
- a. Offering monitoring and evaluation services, assessing compliance with IAEA guidelines and offering suggestions to enhance protective measures;
 - b. Advocating for the implementation of standard worker protections in radioactive waste disposal sites (as well as other sites handling radioactive materials), limiting daily radiation doses in order to prevent related ailments;
 - c. Outlining the specific need for radiation containment and isolation of radioactive material at waste disposal sites to avoid causing human harm;
 - d. Highlighting controlled exposure, a practice in which radiation from waste sites is monitored and controlled accordingly through existing infrastructure, as a practice that should be implemented more broadly;
10. *Endorses* the expansion of the curriculum at NSTDC by building public-oriented programs, based on the ARTEMIS database, to better inform the public on the dangers of nuclear waste in Member States by:
- a. Elaborating the curriculum to better train and inform Member States;
 - b. Building public trust in the knowledge and capabilities of the IAEA;
 - c. Fostering academic exchange programs in nuclear safety and logistics engineering;
11. *Recommends* the establishment of IAEA-led training programs for scientists in the Middle East and North Africa, similar to programs like AFRA-NEST and LANENT, on nuclear waste handling and transportation in the Middle East and Africa to address the lack of educational resources by:
- a. Targeting experts in close proximity to nuclear facilities in education efforts;
 - b. Increasing regional exchange of experts and teachers for greater involvement in knowledge of best practices;
 - c. Fostering academic exchange programs in nuclear safety and logistics engineering;
 - d. Committing to revisit this training program to review its efficacy and evaluate the progress made by participating Member States;
 - e. Emphasizing capacity building within underdeveloped and developing Member States through cooperation with regional Member States;

12. *Supports* a research group, composed of IAEA experts and region-specific representatives, engaging in diplomatic conversations surrounding the evaluation of long-term viability and feasibility of DGRs, identifying technical gaps, and developing public acceptance models by:
 - a. Welcoming implementation from the Technical Cooperation Programme;
 - b. Inviting funding from the IAEA's Division of Nuclear Fuel Cycle and Waste Technology;
 - c. Sharing the findings and recommendations with all Member States;
13. *Advocates for* the establishment of a research panel of experts on new sustainable waste management strategies by:
 - a. Providing technical expertise from experts in advanced nuclear States and knowledge experts from the IAEA on the existing methods of nuclear waste management to be published onto ARTEMIS to be accessed by developing nuclear States;
 - b. Expanding on existing research done by IAEA research teams and global experts through on biotechnology and bioremediation strategies in the neutralization of radioactivity;
14. *Invites* the Technical Cooperation Programme to provide financial assistance to the Developing Member States for the implementation of this assistance initiative:
 - a. Providing technical expertise from experts in advanced nuclear States and knowledge experts from the IAEA on the existing methods of nuclear waste management to be published onto ARTEMIS to be accessed by developing nuclear States;
 - b. Inviting the Technical Cooperation Programme to provide financial assistance to the Developing Member States for the implementation of this assistance initiative;
15. *Congratulates* standout nuclear and non-nuclear States that have adhered to guidelines outlined by the IAEA in an exemplary manner by:
 - a. Urging developed nuclear Member States to help nuclear developing Member States through support by establishing a global recognition by the IAEA system;
 - b. Emboldening Member States to support ARTEMIS and other IAEA organizations and databases with transparent data and to welcome safety review teams with open arms to enhance worldwide partnership;
 - c. Inducing global cooperation between Member States in human and environmental harm reduction associated with the lack of support surrounding managing radioactive waste.

Code: IAEA/1/6

Committee: International Atomic Energy Agency

Topic: Managing Radioactive Waste and its Disposal

The International Atomic Energy Agency,

Reaffirming the importance of comprehensive education and training on the proper disposal of nuclear waste at all levels within hospitals and industries handling radioactive materials,

Recommending the implementation of capacity-building initiatives to ensure safe management and early-stage eradication of nuclear waste risks,

Emphasising the development of deep geological repositories for high-level and long-lived radioactive waste, inspired by the successful and secure models implemented in Finland and Sweden, as a long-term solution to mitigate environmental and health risks,

Acknowledging the danger of nuclear waste to a region's health and the necessity of tailored regional agreements to ensure regional security,

Recognizing the critical contribution of international scientific exchange in the development of peaceful uses of nuclear technology,

Deeply concerned with the lack of protection of Indigenous communities that are disproportionately affected by the mismanagement of radioactive waste and its disposal,

Encouraged by the fact that spent nuclear fuel can be reprocessed to recycle up to 30% of the original material, contributing to Sustainable Development Goals (SDG) 12's goal of sustainable consumption,

Desiring regional collaboration between Member States to share resources and minimize radioactive waste risks,

Deeply concerned with the lack of interregional support in the disposal of radioactive waste,

Calling attention to the lack of funding in some Member States, leading to poor storage of nuclear waste,

Believing in the need for a fund to coordinate programs that work towards improving knowledge sharing, education, and development in the field of radioactive waste and nuclear energy,

Viewing with appreciation the efforts completed by the International Atomic Energy Agency (IAEA) International Physical Protection Advisory Service (IPPAS) through their comprehensive reports to Member States and the development of resources such as the IPPAS' Good Practices Database,

Having examined the inefficiencies and incomplete data resulting from fragmented peer-review systems,

Concerned that the unsustainable financial pressure stemming from current high-cost vitrification methods undermines the long-term viability of nuclear vitrification practices and peaceful nuclear practices among Member States,

Observing the utility of plasma-based solutions for de-radiating nuclear material can be beneficial to any long-term storage solutions,

1. *Calls for* the creation of the Atoms of Tomorrow (ATOM), a fund under the already existing Technical Cooperation Fund, to facilitate the creation and expansion of various programs, including education, scientific improvement, and infrastructure by:

- a. Creating educational programs within the existing ARTEMIS framework through:
 - i. Developing educational programs raising awareness on radiation safety for medical staff and emergency responders by:
 - ii. Creating specialized modules on radiation exposure, contamination control, and patient safety;
 - iii. Allowing groups to publish anonymous case studies to produce statistics on success and make innovative changes to improve patient outcomes;
 - b. Ensuring the safe handling and transportation of nuclear waste through:
 - i. Verifying that all workers who come in contact with nuclear waste materials in docks, warehouses, and transport routes receive appropriate safety training and protection;
 - ii. Encouraging regional experts and observers to participate in ARTEMIS missions;
 - iii. Promoting the usage of the IAEA Open Learning Management System by:
 - iv. Establishing an open Internet forum for those who have attended OLMS courses;
 - v. Discussing the establishment of a Fast Track program for professionals who have earned certifications through the OLMS;
 - c. Training experts in nuclear waste, especially in smaller Member States that do not have extensive nuclear waste expertise domestically;
 - d. Encouraging cooperative funding from Member States in regional agreements to ensure the cost-effectiveness of regional repositories is cheaper for each Member State;
2. *Recommends* the incorporation of region specific nuclear energy education programs into public science education curricula by:
- a. Using creative expression as a means of furthering knowledge about the nuclear energy sector by:
 - i. Creating educational videos and animations catered towards youth;
 - ii. Populations, as well as the creation of a radiation awareness mascot, Ray;
 - iii. Organizing art exhibits in primary education institutions, such as middle schools and high schools, showcasing the realities of nuclear radiated sites;
 - b. Promoting the use of accessible media to holistically educate youth on the potential benefits and consequences of nuclear power as well as general safety protocols;
3. *Expands* the IAEA's information systems by:
- a. Requesting Member States official notify that IAEA of nuclear based agreements;
 - b. Reviewing proposals from groups of Member States to form new regional agreements by:

- i. Providing Member States the opportunity to make suggestions and return feedback to agreement proposals;
 - ii. Identifying regions and Member States that experience similar issues to those outlined in a given agreement proposal;
 - c. Serving as an open forum for Member States to discuss and update regional agreements;
 - d. Establishing a series of grants and funds for new regional agreements to encourage their creation;
4. *Develops* a framework for forming regional nuclear waste transportation networks and constructing Deep Geological Repositories (DGR) for use by a regional agreement by:
- a. Conducting regional assessments on ideal locations through the Site and External Events Design Service (SEED), that maximise regional access, and the necessary infrastructure improvements to streamline access to these regional locations by:
 - i. Being available for assessment upon request of a Member State;
 - ii. Creating an official report of findings made available to participating Member States;
 - b. Conducting cost-benefit analysis surveys for Member States and their use of the regional DGR locations in order by:
 - i. Incentivizing Member States through ARTEMIS, the use regional DGR's;
 - ii. Informing SEED in deciding the location of regional DGR's;
5. *Recommends* the creation of regional representative nuclear committees (RRNCs) that expand on ARTEMIS and have a representative from each Member State that contributes ideas on infrastructure, transportation, and transparency through:
- a. Suggesting that the committee meet once a month, inviting individuals from the scientific and educational advisory boards;
 - b. Evaluating routes for safe transportation of radioactive waste to disposal and management facilities, Member States should encourage safe transportation of radioactive waste between Member States;
 - c. Assessing infrastructure development, including roads and research facilities to aid the transport of radioactive waste and the development of new strategies for its safe disposal;
 - d. Inviting private corporations at the forefront of nuclear development to committee meetings to discuss the development of recycling centers and other innovative solutions for the effective disposal of radioactive waste;
 - e. Operating RRNCs as semi-autonomous regional clusters under the unified Global Coordinated Council (PROTON) through:
 - i. Reporting to PROTON to promote regional development and international cooperation;

- ii. Facilitating a bottom-up approach in which challenges and innovation can directly influence IAEA policy on radioactive waste;
 - f. Inviting transportation engineers, urban planners, data scientists, and nuclear regulators to emphasize infrastructure and logistical development in radioactive waste disposal by:
 - i. Creating a Radioactive Waste Disposal Atlas;
 - ii. Developing a system by which data on optimal routes, risk zones, and effective infrastructure is shared regionally and internationally;
 - g. Inviting civil society groups to meetings once a year to allow for public inclusivity in the governance of radioactive waste disposal;
6. *Suggests* the conversion of IRRS and ARTEMIS into a single, cohesive, and streamlined peer review process and database by:
- a. Utilizing consistent metrics across all Member States for the collection, organization, and availability of widely applicable information within the shared database;
 - b. Conducting a thorough voluntary inspection for Member States every five years with additional two-year follow-up missions to ensure progress;
 - c. Publishing a cohesive summarization of nuclear usage and waste trends within regions to emphasize transparency while preserving Member States' anonymity;
7. *Approves* the expansion of the International Physical Protection Advisory Service's (IPPAS) peer review mechanisms by:
- a. Promoting international standards regarding best practices in the storage of nuclear waste in their reports to Member States based on the findings of the IPPAS' Good Practices Database through:
 - i. Including the assessment of nuclear waste facilities alongside the IPPAS' comprehensive Security Assessments of nuclear materials and facilities;
 - ii. Providing targeted follow-up assistance to Member States following the publication of the IPPAS' Security Assessments through training programs, technical assistance, and contributing to the development of national legislation;
 - b. Assisting Member States in establishing national nuclear security policies for waste management by identifying and addressing vulnerabilities in their current systems by:
 - i. Issuing a yearly report on the status of Member-States and their compliance with IPPAS that would provide a benchmark for improvements;
 - ii. Offering tailored guidance by IAEA on properly complying with IPPAS standards;
8. *Strongly urges* for the inclusion and formal prioritization of the protection of indigenous communities within the IAEA's Commission on Safety Standards (CSS) by:

- a. Including indigenous community leaders in the CSS to ensure the transparent exchange of knowledge and accountability for the concrete implementation of safety measures;
 - b. Creating a yearly, comprehensive report to account for radiation waste found in certain indigenous environments and their improvement through:
 - i. Researching the ways in which indigenous sites have historically been affected by the disposal of nuclear waste;
 - ii. Formulating mechanisms to calculate the impact of nuclear waste disposal on indigenous communities;
 - iii. Recommending solutions to combat the disproportionate health and environmental effects suffered by indigenous populations;
- 9. *Encourages* the creation of regional scientific advisory boards within the IAEA's International Nuclear Safety Advisory Group (INSAG) to serve the local contexts by:
 - a. Gathering regional experts for knowledge-sharing to ensure that local challenges are addressed in a manner sensible to the local context through:
 - i. Identifying the leading professionals within nuclear waste management institutions;
 - ii. Creating an organizational manual that would serve as the basis for the bi-annual meetings of the advisory boards;
 - b. Collaborating with bodies such as the International Science Council (ISC) and building upon this council's existing work and thought leadership;
 - c. Connecting national stakeholders to their national scientific group, thus democratizing the process of knowledge sharing between the diplomatic world and the public;
- 10. *Encourages* the development of cutting-edge technology to more effectively manage and reduce the amount of nuclear waste in the most environmentally sustainable way by:
 - a. Assessing bioremediation and the role of microorganisms, such as bacteria, to change the mobility, speciation, or solubility of nucleotides to create safe environments for the disposed radioactive waste;
 - b. Dispersing insights derived from new research to all Member States without prejudice to wealth or political affiliation;
- 11. *Promotes* the development of spent fuel cooling pools and high-level nuclear waste storage in Deep Geological Repositories within regional organizations and associations by:
 - a. Utilizing funding from ATOM and pooled regional contributions to ensure the cost-effectiveness of regional repositories for each Member State;
 - b. Encouraging biennial IAEA inspections of nuclear cooling systems to verify that high-level waste is prepared properly to be deposited;
 - c. Implementing PUREX nuclear reprocessing training and the development of PUREX re-processing plants within regional water facilities;

12. *Recommends* the Responsible Energy and Peaceful Optimization of Waste for Enhanced Repurposing, the REPOWER initiative, publishing new guidelines and interests to promote by:

- a. Promoting the utilization of ATOM funds for activities that fall within the focus of Project REPOWER by:
 - i. Looking into plasma-based solutions to mitigate levels of radioactive waste among nuclear waste;
 - ii. Encouraging the sustainable process of pyroprocessing on-site recycling alongside private partnerships with industry leaders like Onkalo;
 - iii. Utilizing ATOM funding for public advocacy promoting the use of these sustainable practices and the need for further research;
 - iv. Promoting on-site vitrification processes to ensure safe and sustainable storage of radioactive waste.

Code: IAEA/1/7

Committee: International Atomic Energy Agency

Topic: Managing Radioactive Waste and Its Disposal

The International Atomic Energy Agency,

Recognizing that the challenge of managing radioactive waste and its disposal transcends borders and requires international collaboration in both increasing awareness and refining solutions to this issue,

Cognizant of Member States' varying capacities to address the issues of nuclear waste management, storage, disposal, and recycling,

Emphasizing the need for expansion of the guiding principles of *Disposal of Radioactive Waste* (2011) outlined in International Atomic Energy Agency (IAEA) Safety Standards Series No. SSR-5,

Calling attention to the need for international reprocessing systems for nuclear waste to limit the amount of waste in dispositories and end environmental harm while promoting safe and sustainable usage for nuclear power,

Highlighting the vital role in which educational initiatives such as International Nuclear Security Education Network (INSEN), American Nuclear Society (ANS), Nuclear Curriculum, and International Nuclear Security School for Marie Skłodowska-Curie Fellowship Programme (MSCFP) students play in the global development of generational awareness,

Acknowledging that the development of frameworks that address radioactive safety measures begin at a local level and subsequently shared globally,

Having Considered the global peer review processes and its efficiencies originating from the *1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management*,

Noting further the shared global responsibility for the safe and permanent disposal of high-level radioactive waste, and acknowledging that deep geological repositories represent the most secure and sustainable long-term solution, while emphasizing the importance of regional cooperation and technical support for developing Member States,

Bearing in mind the harmful implications conflict poses on Member States' ability to manage radioactive waste such as damage and restricted access to power facilities,

Fully alarmed at the threat which exposure to radioactive waste poses on public health, both domestically and globally,

1. *Urges* the IAEA Transport Safety Standards Committee to provide an update to SSG-26, the international framework for the export and transportation of nuclear waste between Member States by:
 - a. Creating additional frameworks that consider participating Member States with a limited or complete lack of capacity to address nuclear waste, who will transfer their material to other participating States that do possess such capabilities;
 - b. Expanding the aforementioned provisions to Member States enduring a defensive conflict or occupation;

2. *Suggests* the International Atomic Energy Agency Commission on Safety Standards, in conjunction with the Waste Safety Standards Committee, expand or supplement guidelines outlined in Safety Standards Series No. SSR-5 (2011) by:
 - a. Addressing factors that disrupt waste management and disposal such as natural disasters, armed conflict, power grid shutdowns, climate change, and war;
 - b. Making considerations to regional variations in climate and biodiversity and subsequent environment implications;
 - c. Providing research on relevant technology made in the last decade such as artificial intelligence monitoring systems, remote surveillance, cyber security, and data sharing mechanisms;
3. *Encouraging* the development of international reprocessing systems to recycle high and low levels of nuclear waste by:
 - a. Reprocessing high-level nuclear waste that should be reprocessed into uranium and plutonium for reuse through the extraction of usable material into a new fuel source;
 - b. Suggesting low-level nuclear waste from the decommissioning of nuclear power plants should be recycled into cast-iron, steel, and cutlery;
 - c. Requesting members of IAEA should annually report the data on the usage of reprocessing strategies to allow for transparency and cooperation;
 - d. Calling upon Member States to adopt innovative nuclear recycling technologies that transform radioactive materials into reusable energy sources, thereby promoting sustainability, research, environmental protection, and public health;
 - e. Researching and developing opportunities in current reprocessing systems to ensure maximum usage and efficiency of spent nuclear fuel;
4. *Calls upon* Member States, in collaboration with international organizations such as the International Nuclear Security Education Network (INSEN), the American Nuclear Society (ANS), and academic partnerships including Erasmus+ and the International Nuclear Security School for MSCFP students, to expand educational initiatives on the peaceful and safe use of nuclear energy, particularly targeting youth engagement and awareness through the use of:
 - a. Funds allocated from the annual operating budgets of Member States toward enhancing and developing national nuclear education programs, in partnership with non-governmental organizations (NGO), corporate organizations, and educational institutions, to promote scientific literacy and public understanding of nuclear energy's role in sustainable development;
 - b. Increased accessibility and inclusivity concerning programs, ensuring equitable participation across socioeconomic backgrounds and geographic regions, by sharing successful actions among other regional Member States;
 - c. Further integration of nuclear energy curricula into public school systems and higher education institutions, highlighting safety, environmental protection, and innovation to inspire future generations of nuclear scientists, engineers, and policy leaders;

- d. Reinforcement that these educational initiatives will strengthen global cooperation, transparency, and public confidence in the peaceful applications of nuclear technology;
5. *Requests* further improvement on the existing peer review process through the *Convention on Nuclear Safety (1994) (CNS)*, originating from the *1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* for increased productivity in global collaboration through:
 - a. The creation of regulatory frameworks based on participating Member States' submitted summaries of their respective nuclear legislation and mandates, which are then compared to national frameworks with IAEA safety standards and previous conventions;
 - b. Implementation of a self-reporting mechanism used between cycles of peer review, with the incentivization of further technical support through the utilization of third-party technical experts and civilian participation for states that choose to submit reports on nuclear operation;
 - c. Encouragement of an addendum that fosters digital dialogue and data sharing through an online portal accessible to Member States seeking guidance in innovation;
6. *Calls for* the establishment of a coordinated international framework for the construction and management of deep geological repositories for the safe disposal of high-level radioactive waste, to be developed under the guidance of the International Atomic Energy Agency (IAEA) and in collaboration with the European Union (EU), encouraging inclusive participation from developing Member States by:
 - a. Promoting joint research and knowledge-sharing programs between technologically advanced and developing Member States to ensure equitable access to best practices in nuclear waste containment and long-term monitoring;
 - b. Providing financial and technical assistance through IAEA-coordinated funds and regional development programs such as European Atomic Energy Community (EURATOM) and United Nations Development Programme (UNDP), ensuring that developing Member States can participate fully in geological repository initiatives;
 - c. Supporting the creation of regional geological repositories in cooperation with neighboring States where appropriate, reducing financial burden while enhancing environmental safety and oversight;
 - d. Encouraging transparent public consultation and local stakeholder engagement to foster public confidence and ensure environmental justice within all hosting Member States;
 - e. Requesting periodic safety assessments and peer reviews conducted by the IAEA's Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Radiation (ARTEMIS) and Integrated Regulatory Review Service (IRRS) missions to ensure compliance with international standards and the highest levels of environmental and human safety;
7. *Calling for* the establishment of a Joint European Nuclear Energy Security Taskforce under the IAEA department of Nuclear Safety and Security in which the IAEA should collaborate with the member states, regional organizations and finally already existing cooperative frameworks, such as the African Regional Cooperative Agreement (AFRA), the Regional

Cooperation Agreement for Latin America and the Caribbean (ARCAL) and the Regional Cooperation Agreement for Asia and the Pacific (RCA) with oversight from its Board of Governors (one of the policy-making bodies of the agency). The ultimate objective is to coordinate the monitoring of nuclear facilities and supply chains during geopolitical instability:

- a. All States are not equivalent in their existing means to manage, treat, dispose of, and/or recycle nuclear waste;
 - b. High-level nuclear waste should be reprocessed into uranium and plutonium for reuse through the extraction of usable material into a new fuel source;
 - c. Low-level nuclear waste from the decommissioning of nuclear power plants should be recycled into cast-iron or steel;
 - d. Members of IAEA should report data on the usage of reprocessing to allow for transparency;
8. *Denounces* the disruption of the management and disposal of radioactive waste posed by attacks on nuclear facilities during times of conflict by encouraging Member States to:
- a. Consider the ramifications of these acts such as environmental deterioration, loss of civilian access to power and reliant infrastructure, and public health risks and loss of life.