Documentation of the work of the **International Atomic Energy Agency (IAEA)** NMUN simulation*

NMUN•NY 2023
Conference A
2 – 6 April 2023

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International Atomic Energy Agency (IAEA)

Committee Staff

Director	Ben Wrigley
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Chair	Aisha Elleithy

Agenda

1. Nuclear Waste Management
2. Strengthening Safeguards for the World's Nuclear Facilities

Resolutions adopted by the Committee

Code	Topic	Vote (For-Against-Abstain)
IAEA/1/1	Nuclear Waste Management	Adopted without a vote
IAEA/1/2	Nuclear Waste Management	Adopted without a vote
IAEA/1/3	Nuclear Waste Management	Adopted without a vote
IAEA/1/4	Nuclear Waste Management	102 in favor, 16 against, 17 abstentions
IAEA/1/5	Nuclear Waste Management	100 in favor, 21 against, 14 abstentions
IAEA/1/6	Nuclear Waste Management	103 in favor, 17 against, 15 abstentions
IAEA/1/7	Nuclear Waste Management	102 in favor, 16 against, 17 abstentions
IAEA/1/8	Nuclear Waste Management	91 in favor, 21 against, 23 abstentions
IAEA/1/9	Nuclear Waste Management	99 in favor, 14 against, 22 abstentions

Summary Report

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

I. Nuclear Waste Management
II. Strengthening Safeguards for the World's Nuclear Facilities

The session was attended by representatives of 136 Member States and no Observers.

On Sunday, the committee adopted the agenda of I, II, beginning the discussion on the topic of "Nuclear Waste Management". By Tuesday, the Dais received a total of 13 proposals covering a wide range of sub-topics including technology and information sharing, Reprocessing and Joint Facilities as well as Open Cycle Nuclear Waste Management. The atmosphere in the committee was very positive as delegates were keen to collaborate and add to their working papers and working groups. This spirit of collaboration further saw delegates merge into similar themes and subtopics.

On Wednesday, 9 draft resolutions had been approved by the Dais, 3 of which had amendments. The committee adopted 9 resolutions following the voting procedure, 3 of which received unanimous support from the body. The resolutions represented a wide range of issues, including the broadening of education in the field of Nuclear Waste Management as well as ensuring the highest safety, security, and environmental standards of nuclear waste storage facilities. The Committee showed a high level of cooperation and negotiation, which proved the dedication to finding common and suitable solutions to the issue of Nuclear Waste Management.

Code: IAEA/1/1
Committee: International Atomic Energy Agency
Topic: Nuclear Waste Management

The International Atomic Energy Agency,

Emphasizing the need for Member States in the International Atomic Energy Agency (IAEA) to comply with regulations, laws, and standards to ensure cooperation on the topic of nuclear waste management,

Highlighting the importance of ambitiously working towards reaching the Sustainable Development Goals (SDGs) 7 and 12 and the crucial role of achieving them in order to tackle global issues,

Emphasizing the restrictions imposed upon the extraterritorial dumping of nuclear waste by the Basel Convention, including international waters,

Fully aware of the sovereignty of all Member States and the necessity of international cooperation on the topic of nuclear waste management,

Deeply concerned about the proliferation risks connected to the implementation of closed fuel cycles caused by the elevated ratio of high-level waste (HLW) produced by Small Modular Reactor architectures, especially in conflict-affected regions like the Middle East,

Realizing the importance of sustainable energy options, including nuclear energy applications, in tackling the climate crisis and providing a safe and sustainable future for upcoming generations,

Encouraging the peer-reviewing procedures undertaken by the IAEA's Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS),

Expressing concern for the serious consequences that improper disposal of nuclear waste can have on present and future generations as well as on the environment, such as contamination of soil and water, radiation exposure, and long-term health risks,

Strongly emphasizing that the safe management of nuclear waste is a long-term responsibility that is a long-term responsibility that is essential to protect human health and the environment,

Deeply conscious of the lack of development of sustainable energy production in developing Member States caused by the lack of knowledge-sharing opportunities between and within Member States,

Keeping in mind the lack of physical and financial resources of some Member States to dispose of nuclear waste, in a safe way in their own territory,

Aware that 2-3% of the spent fuel is required to be disposed of even after the reprocessing process as well as that 95% of nuclear waste activities are devoted to HLW as reported in *IAEA Nuclear Energy Series NW-T-1.14 (Rev. 1)* (2022),

Also concerned that only one-third of global spent fuel from Nuclear Power Plants (NPP) has been reprocessed with the remainder being stored or disposed of and that only five among 33 Member States with NPPs possess reprocessing facilities,

Recognizing the need for further research regarding the reprocessing of nuclear waste,

Understanding the need to reduce the costs of closed fuel cycles to make them economically viable,

Acknowledging that Fast Breeder Reactors (FBRs) are currently the only technology capable of lowering the radioactive level and toxicity of nuclear wastes and therefore welcomes the 2022

International Conference on Fast Reactors and Related Fuel Cycles: Sustainable Clean Energy for the Future (FR22),

Emphasizing the importance of a three-stage nuclear power program, which starts by generating electricity in pressurized heavy water reactors, reprocessed and transmuted in the FBRs, and sustainably refueled in thorium-based reactors, in order to reduce the toxicity of nuclear waste as much as possible to prepare for storage or disposal,

Noting that only four Member States currently have the programs or construction plans for Fast Breeder Reactors due to some obstacles regarding safety within the process of reaction such as sodium leaks in steam generators,

Bearing in mind recent studies from the World Nuclear Association indicating the unsustainability of current strategies of nuclear waste management,

Emphasizing the need to address the proliferation risks connected to closed fuel cycles before implementing them in conflict-affected regions like the Middle East and, moreover, the need of reducing the costs of reprocessing spent fuel in order for it to be an economically viable option,

1. *Therefore decides* to pioneer Joint Regional Reprocessing Facilities (JRRFs) – reprocessing facilities operated by multiple Member States and making all regional partners shareholders thereby reducing proliferation risks through mutual supervision and reducing cost through sharing personnel and equipment – by hosting a conference on exploring the possibilities for Member States to operate JRRFs, with Member States as well as the World Nuclear Association and stakeholders from the scientific community invited;

2. *Suggests* the establishment of a regional cooperation initiative for joint storage facilities similar to the Tartarus Initiative on Solving Nuclear Waste Management which:

    a. Seeks to introduce joint regional facilities for nuclear waste storage;

    b. Builds upon the experience of the ARTEMIS' evaluations and conducts research regarding the geographically most favorable places based on data already gathered by United Nations Environmental Agency (UNEA);

    c. Provides efficient long-term solutions for storing nuclear waste by enabling access to geographically most favorable places, ensuring geological stability and ruling out the threat of wildfires or flooding;

    d. Imposes to every Member State determined standards to follow whenever they wish to build new nuclear facilities near water sources, especially if the source is too near agglomerates;

    e. Determines that nuclear disposal sites must be a certain distance away from waterways due to the potential of disasters;

    f. Encourages joint efforts regarding waste and recycling management, the strengthening of national institutions, and the increased awareness of natural and socio-cultural aspects through:

        i. Providing a center for regional cooperation close to the chosen location of the joint multinational storage facility, thereby facilitating the exchange of best practices and knowledge;

ii. Addressing factors such as natural habitats, biodiversity, geological, and geographical issues as well as minorities and concerns by the general population before choosing a final position for the joint facilities;

g. Uses funds provided by the involved Member States relative to the amount of nuclear waste they store in the joint facility;

3. *Approves* the creation of an online UN Strategic Database for the IAEA Member States to not only facilitate the sharing of the most efficient strategies for nuclear waste management between all Member States but also ensure greater transparency between Member States by:

    a. Outlining research regarding the safest ways to set up nuclear facilities while securing any sensitive data by the IAEA to protect member states' national security;

    b. Promoting the most sustainable and efficient pathways to producing nuclear energy and power;

4. *Promotes* the further development and implementation of the closed fuel cycle and other innovative nuclear waste solutions, to both reduce the amount of nuclear waste and ensure the safer disposal of nuclear waste by:

    a. Building agencies among governments of Member States with binational and transnational agreements on research and development of closed fuel cycle systems coordinated by the Integrated Nuclear Infrastructure Review;

    b. Combining financial resources from the Technical Cooperation Fund and Extrabudgetary Fund from Member States to aid developing Member States to implement research reactors as well as new innovations in the closed fuel cycle for energy production;

    c. Encouraging the collaboration of universities and government agencies to find more efficient solutions by fostering working groups with the national government nuclear energy agency and nuclear science university researchers and faculty;

    d. Reinforcing the IAEA's *Technical Safety Review of Generic Reactor Safety* to strengthen the safe implementation of innovative reprocessing technology;

5. *Further encourages* the promotion of research on borehole disposal as an alternative to deep geological repositories by:

    a. Publishing the final results of its ongoing landmark Coordinated Research Project (CRP) on *Developing a Framework for the Effective Implementation of a Deep Borehole Disposal-System* in a technical report;

    b. Hosting a follow-up CRP on the feasibility of intermediate-depth borehole disposal in the vadose zone in arid climate regions;

    c. Making use of the access provided through the cooperation in the Tartarus Initiative to geographically fitting places for borehole disposal;

6. *Invites* Member States to join the *Sustainable Approach For Ecosystem* (S.A.F.E.) project starting May 2024 until May 2034 funded by the Technical Cooperation Fund, which aims to increase the knowledge about the most efficient and environmentally safe practices for nuclear waste reprocessing by:

a. Focusing on finding the most efficient transmuting strategies for recycling nuclear waste by increasing the research on the topic;

b. Directing attention to the use of geological disposal in order to find more sustainable nuclear waste management solutions;

c. Facilitating trust, transparency, and safety by increasing the available knowledge about the best practices used in the field of nuclear waste management by promoting the implementation of the IAEA Technical Cooperation Programme;

d. Creating an IAEA directive describing the safest and the most sustainable practices for member states to voluntarily follow;

e. Deploying a team of specialists checking on the management of Member States' reprocessing processes every five years to ensure that the practices are being implemented in the best possible way;

f. Trusting that the most efficient knowledge sharing happens by hosting biannual conferences in which Member States gather together to share knowledge on the topic of nuclear waste management;

7. *Recommends* Member States to develop and implement programs to advance the use of efficient monitoring techniques to prevent nuclear catastrophes from happening in nuclear waste management facilities:

    a. By requesting Member States to create annual reports in which they detail the progress and development of their nuclear waste management for the IAEA to review;

    b. By encouraging Member States to adopt the Rokkasho Solution Measurement and Monitoring System as it employs rapid scanning, processing, and modeling through Artificial Intelligence software to identify internal discrepancies in nuclear processing machines through new high-technology scanners applied to the chemical liquid reprocessing mechanism;

8. *Encourages* the Technical Working Group on Fast Reactors, referring to Acoustic Signal Processing for the Detection of Sodium Boiling, as an initiative to establish CRPs to promote further research for Sputter Ion Pump and electrochemical hydrogen meters based on real-time leak detection systems with the aims of:

    a. Speeding up the indication of sodium leakage in Fast Breeder Reactors (FBRs);

    b. Promoting the safe implementation of the FBRs by tackling one of the obstacles, the risk of sodium leaking;

    c. Speeding up the implementation of FBRs, which is the only way to lower the level of transmuted nuclear waste;

    d. Preventing explosions that pollute the environment and puts humans at risk of radiation exposure;

9. *Calls upon* Member States to collaborate on a CRP to explore alternative nuclear reactor architectures for nuclear materials which cannot be reprocessed further, that:

a. Prioritizes exploring architectures that minimize the level of nuclear radioactivity of its waste product;

b. Ensures it provides the same construction flexibility provided by comparable architectures;

10. *Affirms* the creation of CRPs to explore promoting the financial effectivity of closed nuclear fuel cycles through the Gaia project:

    a. Promoting IAEA research contracts regarding pyro processing among other methods of closed nuclear fuel cycles;

    b. Welcoming connections with technical institutions through IAEA research agreements;

11. *Expresses its hope* that with increased support, developing Member States could also implement complementary sustainable technologies by:

    a. Expanding sustainability projects throughout developing Member States by using shared technology from other Member States to develop safe and secure nuclear waste management processes;

    b. Strengthening capacity building through training workshops held for developing Member States by other Member States in order to exchange learning on complimentary sustainable projects that have been implemented;

12. *Calls upon* Member States to intensify their actions in implementing more sustainable ways of nuclear waste management through all means of education by:

    a. Actively motivating Member States to substantial actions for a safer and more eco-friendly future:

        i. Educating upcoming generations through sustainability programs taught in schools, universities, and community centers;

        ii. Informing the population on the risks and dangers of hazardous nuclear waste to promote a broader understanding of the topic of nuclear waste management;

    b. Creating inclusive and accessible volunteer programs in local communities to educate citizens on nuclear waste, especially approaching marginalized groups of society, who do not have the same access to education and social programs.

Code: IAEA/1/2
Committee: International Atomic Energy Agency
Topic: Nuclear Waste Management

The International Atomic Energy Agency,

Guided by the Sustainable Development Goals (SDG), especially 4 on Quality Education), 7 on Affordable and Clean Energy, 9 on Industry, Innovation and Infrastructure, 12 on Responsible Consumption and Production, and 13 on Climate Action,

Fully aware of the risks and consequences posed by nuclear waste to human lives and the environment, as recognized by the International Atomic Energy Agency 2005 Chernobyl Report Forum,

Contemplating that magnifying the nuclear knowledge in University degrees must be aligned with the IAEA standards to accomplish long-lasting efficient results in the safe disposal of nuclear waste,

Confident that through the use of technology, including, but not limited to, data processing systems and unmanned aerial vehicles, the monitoring, analyzing, and repositoring processes of nuclear waste can be tremendously innovated,

Recognizing the International Atomic Energy Association (IAEA) bulletin, which promotes nuclear power and clean energy transition,

Acknowledging the Nuclear Waste Management School (NEMS) IAEA Program, where education, training, and capacity building opportunities promote knowledge and skills to professionals for the development of Safe Nuclear Waste Management locations,

Recognizes the broad and diverse technical work already being pioneered by the IAEA and Member States to expand national readiness to respond to all levels of locally produced nuclear waste,

Taking in consideration the IAEA's Technical Cooperation Programme (TCP), incorporating in-developing countries to share technical knowledge about nuclear waste management,

Bearing in mind that very low level-, low level-, and intermediate level-nuclear waste makes up more than 96% of the overall volume of existing nuclear waste,

Acknowledging the utility of nuclear energy as a clean source of energy as stated by the 2019 report Nuclear Power in a Clean Energy System from the International Energy Agency,

Deeply concerned with the current state of nuclear waste management as the industry is poorly positioned as the European Union's nuclear waste is expected to grow by 6.6 million metric tons alone and which poses a serious environmental risk,

Recalling the *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* and Article 3 of the *Statute of the International Atomic Energy Agency*, which outlines the IAEA as responsible for addressing the management of nuclear waste and for promoting peaceful uses of radioactive materials,

Having regarded Article 2 of the *Statute of the International Atomic Energy Agency* that states that the Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world through Member States sharing related technology on a regular basis, and enact and abide by common regulations on nuclear waste management,

Keeping in mind the priorities stressed by the Nuclear Security Plan and the importance of strengthening the nuclear security framework globally, especially to reduce the risks of nuclear terrorism and misuse by illicit state actors,

Further recalling the initiative on the Preservation of Records, Knowledge and Memory launched by the Nuclear Energy Agency (NEA) in 2011 as an important cornerstone for knowledge sharing between Member States producing and benefiting from nuclear technology,

Underlining the importance of the IAEA Specific Safety Requirements,

Welcoming the General Assembly Resolution 76/35 on "Prohibition of the Dumping of Radioactive Wastes" adopted in 2021, which emphasizes the risks of badly managed radioactive waste on health,

Understanding the importance of the European Union's (EU) Radioactive Waste and Spent Fuel Management Directive issued in 2011,

Drawing attention to existing boards for Nuclear Waste Management, such as the Radioactive Waste Management Committee (RWMC) by NEA Member States, as an example for a sustainable approach to waste management and a platform for sharing expertise,

Emphasizing the importance of achieving a sustainable, safe, and long-term solution for the final disposal of nuclear waste,

Reaffirming the right of all Member States to develop and use nuclear energy for peaceful purposes in compliance with their international obligations,

Highlighting the essential role played by women in the development and operation of the atomic energy sector, and their under-representation in this industry, at only 22.4% of the workforce,

Keeping in mind the importance of increasing the training of young professionals through the Women in Nuclear (WiN) initiative as well as the Marie Skłodowska-Curie scholarships (MSCFP),

Desiring that nuclear reprocessing facilities must be employed responsibly, to prevent possible proliferation, especially in unstable regions,

Noting with concern the lack of a widely accepted and proven method for the final disposal of high-level nuclear waste,

1. *Encourages* Member States to work with the IAEA, and any corporations producing or handling nuclear waste, when and where it is determined to be appropriate, in order to:

    a. Support any national technical education based programs focusing on increasing the reach of the Integrated Capacity Building Programmes for safety already being implemented by the IAEA, growing waste handling technology sharing between interested sub-national parties and non-governmental organizations (NGOs) such as the World Nuclear Association (WNA) and involve young professionals in the nuclear field; particularly women, following the Women in Nuclear (WiN) initiative, through national initiatives promoting gender-equal employment in the nuclear industry;

    b. Create new programs that:

        i. Increase corporate readiness and responsibility in handling low level nuclear waste such as that generated at medical and other facilities;

        ii. Enhance knowledge sharing between Member States on the existing options for region-specific disposal sites, such as intermediate-depth borehole disposal in dry and arid climates and deep geological repositories and protecting them from seismic activity by utilizing the KBS-3 disposal method;

        iii. Increase the number of regional technical expertise sharing programs while maintaining regional coherence in these programs following the example of the Strengthening Regional Cooperation (ARCAL CLXXIII) program for Latin America and the Caribbean;

iv. Continue to disseminate knowledge to developing Member States through programs resembling the 1990 *African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology* (AFRA), in order to streamline the nuclear waste advances of said Member States;

v. Build training and professional capacity in the model of the Building Capacity in the Peaceful Use of Nuclear Science and Technologies at the National University of Uzbekistan and the Samarkand State University program to enhance national technical and academic expertise in handling and developing nuclear waste management;

vi. Allow Member States to collaborate on knowledge-sharing and training efforts akin to the International Conference on Occupational Radiation Protection for Strengthening Radiation Protection of Workers to increase discussion of safety measures in the nuclear energy workforce;

c. Integrate with online cybersecurity programs such as CompTIA security to Improve employability and a better prepared workforce:

i. Expanding educational programs including Cyber Learning Platform for Network Education and Training (CLP4NET) regarding nuclear power and nuclear waste by incorporating online cybersecurity programs such as incorporating CompTIA security certifications to improve employability and a better prepared workforce and Educational Programs including CLP4NET regarding nuclear power and nuclear waste;

ii. Showcase research achievements by investing in the annual International Conference on Nuclear Knowledge Management and Human Resources Development to promote the further goal of global economic competitiveness;

2. *Invites* Member States, especially those with investments in nuclear energy and economic resources, to join Innovative Nuclear Reactors and Fuel Cycles (INPRO) to promote cooperation by gathering contribution such as sending experts, funding projects, and sponsoring meetings to:

a. Share plans, and other necessary information to further the development of technology such as nuclear waste reprocessing;

b. Provide a wide variety of knowledge and solutions for global interest and to strengthen multilateral collaboration;

c. Enhance nuclear reactor efficiency and reduce the quantity of waste produced by all radioactive waste producing facilities;

d. Increase extra-budgetary funds for INPRO to accelerate their collaboration project especially INPRO Collaboration Project Study on Cooperative Approaches to the Back End of the nuclear fuel cycle (NFC): Drivers and Institutional, Economic and Legal Impediments;

e. Continue to expand contributions to all IAEA programs that provide other Member States with the resources and expertise to respond to all levels of nuclear waste production and transportation;

f. Explore the possibility of using the Onkalo facility as the sole current example of a functional deep stable geological repository, utilizing the KBS-3 disposable process, capable of safely containing high-level nuclear waste;

3. *Further invites* Member States, especially those in developing regions and those that lack technical nuclear expertise, to establish regional university research hubs and higher education programs on nuclear waste and its management to:

    a. Take part in IAEA Coordinated Research Activities;

    b. Expand the AFRA to facilitate information sharing between developing Member States in Africa and developed Member States;

    c. Promote the public understanding of nuclear technology and waste management through regional outreach programs that;

        i. Ensure total transparency in the handling of nuclear waste and clarifies myths and prejudices surrounding the topic;

        ii. Lessen for the knowledge gap between generations and further increase global knowledge through a social media campaign showcasing the safe handling and disposal of nuclear materials through making use of the IAEA's pre-existing Twitter, Facebook, and Instagram platforms to launch campaigns;

        iii. Increase knowledge sharing between Member States on the existing options for region-specific disposal sites, such as intermediate-depth borehole disposal in dry and arid climates and deep geological repositories utilizing the KBS-3 disposal method;

        iv. Encourage developed Member States to directly invest in developing Member States nuclear disposal industries so long as they meet certain standards set by IAEA;

    d. Foster cooperation between all regional research hubs especially those in developing regions and higher education programs on a level to promote an international exchange students program to:

        i. Encourage developed Member States to accept exchange students from emerging countries regarding nuclear science program in order to enable knowledge exchange;

        ii. Support Member States to offer internships to students in nuclear science in order to form a better workforce;

        iii. Suggest Member States promote scholarships that help train academic and technical professionals in nuclear technologies with an emphasis on waste reduction and handling;

    e. Develop a network of exchange platform between university hubs and IAEA regional training centers, the IAEA World Nuclear University and IAEA Technical Meeting on Nuclear Education Networks to facilitate information sharing, joint research, and increased academic opportunity:

        i. Information sharing which could lead to Member States considering the implementation of technical advances from the Ruhr University in Bochum in disposing of radioactive waste through fission;

        ii. Cooperation between different Member States to establish shared training programs and laboratories/professorship exchanges;

f. Participate in International Predisposal Network which is a secure Platform for knowledge sharing to strengthen international nuclear disposal and storage through a safetyWeb platform with direct communication between experts, checklists, toolkits, and annual review meetings;

4. *Proposes* to expand the International Conference on Radioactive Waste Management summit by:

    a. Providing additional resources at the conference for scientists, civil society, and professionals in the field of nuclear waste management to exchange knowledge and ideas;

    b. Holding public meetings such as National Workshop on Regulations for the Physical Protection of Nuclear Material and Nuclear Facilities to promote understanding of nuclear energy in a useful and peaceful manner;

    c. Encouraging Member States to share information of previous surveys and research in order to prevent accidents caused by the peaceful use of nuclear energy and increase security through the help of the main international legal instruments in the area of nuclear security: the Convention on the Physical Protection of Nuclear Material (CPPNM) and its 2005 Amendment;

    d. Promoting the participation of women, youth, and young professionals, as well as individuals from developing Member States;

5. *Requests* Member States acquire suggestions from IAEA Nuclear Energy Series No. NG-T-3.1 Report, to ensure that professionals and authorities have the competencies necessary to raise awareness of the risks of nuclear waste that would make the young generations find nuclear energy degrees more attractive, which would:

    a. Help Member States to increase their capacity building;

    b. Encourage Member States to adopt models to promote safe nuclear waste disposal;

6. *Endorses* the IAEA to extend regional participation of professionals and technicians responsible for the safe management of nuclear waste in workshops to:

    a. Establish a reference system for the safe management of nuclear waste;

    b. Enable participants to enhance their knowledge on storage and disposal, as well as record keeping of all operation and strategies to regain control over orphan sources;

    c. Improve port authority readiness through training officials with exercises that simulate real-world scenarios and training security awareness to deal with unregistered shipment of dangerous radioactive waste of all levels;

    d. Follow the example of existing Technical Cooperation (TC) projects, to develop long-term partnerships with the purpose of building infrastructure and expertise to assists states in sharing the best practices of Member States aligned with the IAEA objectives;

    e. Ensure that Member States with early nuclear facilities and those that are considering nuclear facilities are assisted in the development of nuclear energy and the safe storage of nuclear waste;

f. Verify that the resulting nuclear waste has a minimized impact on the surroundings of the facility;

7. *Encourages* Member States to prioritize research into alternative solutions for the management of nuclear waste such as recycling, reprocessing, and transmutation by:

    a. Establishing regional reprocessing facilities to ensure that nuclear waste is either being safely stored or safely repurposed in a safe and careful manner;

    b. Implementing reprocessing facilities in a way that promotes a high level of security, while:

        i. Ensuring that nuclear waste does not end up within the hands of illicit state and non-state actors, and that the storage and reprocessing is to be done in a safe and highly secure manner, especially in regions where risk of proliferation is imminent;
        ii. Improving the handling of Nuclear reprocessing facilities in regions with risk of proliferation in form of joint reprocessing facilities governed by a board consisting of one delegate from each Member State participating in these processing facilities who will administer the programs though a single vote board, encouraging these boards to have active monitoring with the purpose of minimizing the misuse of these facilities;

    c. Promoting multilateral agreements for reprocessing between Member States with reprocessing facilities and those who are open to adopting reprocessing to establish by 2025, a Cooperation Agreement for Peaceful Use of Nuclear Energy with help from the IAEA Legislative Assistance Programme to facilitate negotiation;

    d. Tasking Member States with extending research on the current methods of reprocessing in order to prevent the weaponization of reprocessing facilities and any nuclear waste, with specific attention to:

        i. Preventing the creation of dangerous chemical compounds that can be illegally obtained by non-state actors;
        ii. Preemptively preventing the possibility of non-Nuclear Weapon State from proliferating nuclear weapons;

8. *Invites* Member States to consider establishing, regional, multilateral repositories for nuclear waste, based on scientific evidence, and taking into account geological, hydrological, and social factors to:

    a. Organize nuclear waste storage in regional-specific facilities by determining the amounts of nuclear waste and creating regions for a predetermined amount of nuclear waste;

        i. Location would be determined by an assessment done by the host member state following the IAEA Site Specific Safety guidelines to determine the proposed locations potential environmental impact as well as safety for populations and safe transportation routes;

        ii. Regional zone storage will allow for Member States to collaborate together to create cooperative repositories in order to reduce the financial burden on any single state;

iii. Facilities will be operated through a directorship model where Member States are involved in the safe management and running of the facility;

iv. Mechanisms are designed to maintain transparent and safe to meet the standards set out in the IAEA Specific Safety Requirements;

b. Minimize transportation distance to regional specific facilities for nuclear waste to significantly reduce the risk of leaks or other containment breaches of hazardous materials to:

i. Establish additional security protocols for the transportation of nuclear waste based on the model of the 2022 *Inland Transport of Dangerous Goods Risk Management Framework* which outlines steps to protect the transport of nuclear waste connections between facility and disposal sites;

ii. Create multilateral negotiations between each region that hosts the reprocessing facilities to discuss setting distance limits on the transportation routes of nuclear waste;

9. *Requests* Member States to ensure that storage facilities for nuclear waste comply with the highest safety, security, and environmental standards, and to take preventative measures by increasing security against accidents, theft, or unauthorized access, which will:

a. Enhance security through a Co-operation Agreement for Safety Use of Nuclear Energy based on IAEA safeguards to promote involvement and the cooperation of contributing bodies to regional storage facilities, create an IAEA policy that will be recommended to the stakeholder nations of the nuclear waste storage facilities;

b. Empower the establishment of an safety and security policy to ensure that all regional storage hubs are meeting the standards set out by the IAEA and that the host member state ensures that all safety standards and labor requirements are met;

10. *Encourages* Member States to continue to abide by their international obligations regarding the management of nuclear waste, including the 1997 *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management*, and to work towards enhancing the effectiveness of these instruments so that:

a. Member States should prepare for hazards such as nuclear disaster and extreme weather events through the creation of a disaster plan:

i. Created in cooperation with industry experts as well as those who have first-hand experience with nuclear disasters and potential environmental impacts;

ii. Member states who share borders with active nuclear reprocessing sites nearby should also work on a common disaster plan in order to ensure their populations a safer and more effective emergency plan;

b. Member States who are stakeholders in a regional reprocessing plant will establish committees to ensure that the disaster plan is actively updated annually and used in practice;

c. Nations learn from previous nuclear disasters to implement appropriate safeguards to ensure that disaster is mitigated and that those living near the facility are properly educated;

11. *Suggesting* Member States that possess any facility that produces high level nuclear waste to consider the installation of nationally owned storage units inspected by the IAEA based on the Spanish system of the Centralized Temporary Storage Facility (CTSF) in any location of their choosing;

12. *Endorses* Member States and the IAEA to consider creating online classes and broader curricula to provide the training and certification for professionals to use drones to collect data with the aim of decreasing the high levels of radioactivity through:

    a. Specialized courses which teach how to manage and monitor the disposal of nuclear waste by conducting aerial surveys and inspections of transporting radioactive material which reduce the human need to be close to radioactive waste;

    b. Teaching the use of analysis technologies by implementing improved cameras, sensors, and geographic information systems to safely monitor the processes inside and around any waste storage facilities in order to create detailed 3D maps of nuclear waste storage sites which show their layout;

13. *Further Encourages* Member States willing and able to contribute funding to the IAEA to provide funding to further all aforementioned programs including but not limited to:

    a. Expansions of existing programs and the creation of new regional and national frameworks;

    b. The regionally developed storage facilities and providing them with physical barriers, surveillance cameras, access controls, security personnel and emergency response plans to:

        i. Prevent unauthorized access and diminish the risk of theft, sabotage and overall national security;

        ii. Voluntarily monitor via surveillance cameras and other security equipment for violations of the *Treaty on the Non-Proliferation of Nuclear Weapons* (NPT) of 1 July 1968 by the host Member States Personnel and the IAEA inspectors if requested;

    c. The regional nuclear reprocessing plants in order to overcome:

        i. Legal barriers for the international cooperation in reprocessing with legal input through the Office of Legal Affairs;

        ii. Fiscal barriers to safe and effective decommissioning of any aging nuclear facility;

14. *Approves* the inclusion of the progress of the implementation of this resolution, including any challenges faced, best practices identified, and areas requiring further action in the annual report of the IAEA to the General Assembly.

Code: IAEA/1/3
Committee: International Atomic Energy Agency
Topic: Nuclear Waste Management

The International Atomic Energy Agency,

Recognizing the importance that nuclear energy plays as per the 2030 Agenda for Sustainable Development (A/RES/70/1) of 2015,

Applauding the versatility of IAEA Coordinated Research Projects (CRPs) in bridging the research gap between developed and developing countries,

Noting efforts in CRPs focused on closed cycle strategies such as *Processing Technologies for High Level Waste, Formulation of Matrices and Characterization of Waste Forms* (2011) under IAEA supervision which raises a platform for pyro processing,

Applauds the existing work of initiatives such as the Comprehensive Capacity-Building Initiative for State's Systems of Accountancy for and Control of Nuclear Material (SSACs) and State or Regional Authorities (SRAs) (COMPASS),

Further reminds frameworks such as the Global Nuclear Safety and Security Network (GNSSN), whose purpose is to provide a platform for information sharing between Nuclear-Possessing States and Non-nuclear Possessing States, could be strengthened by periodically updating the network for a more streamlined and modernized system,

Calls to attention that COMPASS allows the IAEA to work individually with Member States to assess how to better assist and direct resources which include equipment and training, as well as providing legal and human resources help, for this reason, greater outreach is necessary to inform and encourage non-Member States to participate and existing Member States to continue funding,

Understanding the difficulty of reprocessing nuclear materials for all Member States,

Reaffirming support for IAEA's Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS) to ensure adequate peer review protocols between Member States,

Reiterating the importance of cooperation between the different states across different geological regions,

Calls attention to the framework established in the 2011 *IAEA Action Plan on Nuclear Safety* to promote and support future technological developments,

Reaffirms the *Statute of the International Atomic Energy Agency*, Article II to ensure that the contribution of atomic energy is for peace, health, and prosperity,

Keeping in mind Sustainable Development Goal (SDG) 12 pertaining to the IAEA in the responsible consumption and production of radioactive waste to its permanent disposal site in a sustainable manner through meaningful and secure processes within closed-cycle strategies,

Guided by SDGs 16 and 17 which emphasize partnerships between Member States to attain peace, and security as well as mitigate the differences among Member States,

Concerned about the lack of public participation in nuclear waste disposal initiatives,

Admonishing the lack of development and implementation of standardized emergency preparedness protocols established and agreed upon by all Member States,

Reiterating its call for fellow Member States to collaborate with the IAEA and establish nuclear regulatory bodies to oversee entire nuclear programs and nuclear activities, and to enact legislation appropriate to addressing nuclear waste,

Applauding international programs such as the 1990 *African Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology* (AFRA) encouraging collaboration between the European Union and Member States in Africa desiring to pursue nuclear energy through consultations and workshops,

Realizing the importance of installation of an International Nuclear Information System (INIS) National Center database to enhance safety culture, training, and assistance,

Acknowledging the report from IAEA Symposium on International Safeguards: Building Future Safeguards Capabilities for optimization of an autonomous and artificial intelligence in closed cycle nuclear waste disposal to identify anomalies,

Promoting multinational facilities for regional Member States' low level (LLW), intermediate level (ILW), and high level waste (HLW),

Cognizant of the *Energy Progress Report* (2022) to attain affordable, reliable, and renewable energy by 2030,

Acknowledging the *Nuclear Power Secure Energy Transitions Report* (2022) that addresses nuclear energy's contribution to mitigating energy and climate crises,

Recognizing also the continuation and developing of the existing guidance of the IAEA, comprising the Nuclear Security Series, supplementing the guidance in the Code of Conduct on the Safety and Security of Radioactive Sources, and assisting fellow Member States in enacting such guidance,

Encourages Member States to join with the IAEA and the Organisation for Economic Co-operation and Development (OECD)'s Fuel Incident Notification and Analysis System, a secure web forum to cooperate and exchange best practices by utilizing fuel management analytic toolkits, providing real-time reports for the enhancement in joint emergency response,

1. *Establishes* triangular cooperation between developed Member States, developing Member States, and beneficiaries to modernize the nuclear technology in Member States taking into account that:

    a. The type of technology that is given to Developing Member States will aid said nations in optimizing nuclear materials and nuclear reprocessing;

    b. Member States will not be required to participate in these programs;

2. *Further requests* the Inspiring Science Education outreach project for the creation of regional knowledge-sharing programs to aid in advancing nuclear waste management;

3. *Recommends* that Member States that do not have the infrastructure for efficient nuclear waste disposal request the cooperation of Member States with existing nuclear infrastructures with other Member States who possess emerging nuclear programs and are therefore unable to properly dispose or reprocess nuclear waste;

4. *Invites* Member States to create and strengthen regional CRPs to facilitate global communication toward cost-effective strategies for closed-cycle fuel management by:

    a. Implementing pyro processing strategies in discussions for purposes of increasing the cost-effectiveness of this strategy;

    b. Allowing Member States of all levels of development access to important information regarding sustainable spent fuel strategies among other initiatives;

c. Establishing a regional focus to further emphasize and standardize the collaboration of international efforts between Member States;

5. *Asks* for regional cooperation and international partnerships to create regional reprocessing centers as well as regional disposal sites to ensure the proper handling of nuclear waste by:

    a. Having the IAEA facilitate the partnership of Member States who do not have reprocessing capacity with other Member States in the region to ensure safe disposal of nuclear waste through:

        i. Partnering with the IAEA and cooperating member states to create a consistent pathway for everyone in the region;

        ii. Ensuring that receiving Member States are approved by the IAEA criteria as stated by the Waste Safety Standards Committee;

    b. Calling upon Member States with developed nuclear waste management practices to assist in mitigating interregional discrepancies between proximal Member States through cooperation, knowledge sharing, and the transportation of nuclear waste from Member States without the capacity to process nuclear waste to better-equipped processing centers. This will be done by:

        i. Requesting developed Member States with the expertise to assist developing Member States in normalizing methods and practices pertaining to the transportation and reprocessing of nuclear waste;

        ii. Encouraging said partnerships to be emphasized between North-South, thereby bridging the gap between programs such as seen in AFRA;

    c. Utilizing a regional focus on coordinated research that will establish avenues in which previously mentioned centers and sites may be accomplished expediently;

6. *Recommends* fellow Member States to abide by the International Conference on the Safety and Security of Nuclear Sources and shift the focus on sharing best practices related to nuclear waste management:

    a. Establish different response levels for implementing protective and preventive measures;

    b. Encourages Member States to participate in nuclear crisis management exercises;

    c. Promotes multilateral agreements between Member States to establish an efficient system for nuclear waste disposal through programs such as the Technical Cooperation Programme;

    d. Establish regulations for emergency preparedness and response, including requirements for emergency planning, training, and exercises;

7. *Recommends* the IAEA Technical Working Group for Nuclear Knowledge Management expand its scope to focus on research on how Member States can increase public participation in nuclear waste management;

8. *Urges* strengthening ARTEMIS by adding a focus on the weaponization of nuclear waste by:

    a. Fortifying criterion regarding radiological weapons development for the expert's peer review on:

i. Health risk against populations;

ii. Ambitions of acquiring radiological weapons;

iii. Blueprints of radiological weapons;

b. Ensuring full transparency of information regarding the development of radiological weapons to the Spent Fuel and Radioactive Waste Information System (SRIS);

c. Requiring higher accessibility to ARTEMIS by:

i. Providing more experts and specialists to the international community's services;

ii. Increasing activities for Member States developing their first nuclear infrastructures;

9. *Adheres* to IAEA's Atoms for Peace and Development to ensure that nuclear technology is utilized for peaceful purposes with regards to technological research and reprocessing methods to acknowledge SDG 16 to prevent any weaponization of nuclear technology for unlawful means;

10. *Ensures* the security of nuclear waste transportation between facilities and reprocessing sites pertaining to the danger to the environment specifically through regional and international cooperation, which should be aided by organizations such as the United Nations Environment Programme (UNEP) and the International Commission on Radiological Protection (ICRP) by:

a. Adopting the EU's Transport of Dangerous Goods Risk Management Framework by the inclusion of detectors;

b. Strengthening the IAEA's Safeguards on Security of Radioactive Materials in Transport with the concern of future consequences of a malicious act during international or domestic transport;

c. Using advanced technologies such as the Distributed Data Ledger as a global real-time database for data transparency when transferring nuclear material;

11. *Strongly recommends* developing Member States to model their emerging nuclear energy programs after the IAEA's project on Strengthening the Regulatory Infrastructure to Enhance Radiation Safety in Latin America and the Caribbean (2019) to strengthen infrastructure and security;

12. *Calls* for the implementation of the Integrated Nuclear Waste Management (INWM) plan into all nuclear facilities at a multinational level by addressing its: inventory, time frame for an integrated plan, assessment of facility needs, costs estimation (life-cycle cost analyses), and funding and financing;

13. *Strongly recommends* incorporating artificial intelligence (AI) such as Japan's Rokkasho Solution Measurement and Monitoring System to lessen the requirement for manned intervention and exposure to locations with spent nuclear fuel designated as high-level waste and for extensive commercial operations by:

a. Strengthening AI technology to implement authentication and authorization mechanisms to prevent unauthorized access to sensitive information or control of the disposal process;

b. Reaffirming the long-term benefits of pattern recognition unseen by human evaluation;

c. Calling for biannual inspections designed for information verification, ad hoc, or routine inspections at that site;

d. Highlighting the benefits it employs such as rapid scanning, processing, and modeling through AI software to identify internal discrepancies in nuclear processing machines through new high-technology scanners applied to the chemical liquid reprocessing mechanism;

14. *Recommends* once the pilot of COMPASS is complete to analyze the success of the initiative and that:

    a. Each Member State involved will be analyzed on a state-by-state basis to determine the effectiveness of the initiative once the pilot stage has been completed and this analysis will determine any deficiencies in the initiative to their reform and apply to another set of participating Member States;

    b. It will be expanded to more developing Member States to increase the amount of Member States with a functional nuclear waste program to be aided by the initiative will be determined by the general economic development of a country and will preferentially choose countries who can benefit from this initiative;

    c. There will be a periodic assessment, at least annually, in which countries may benefit from this initiative and which countries may soon benefit from the initiative to establish preparedness and allocate adequate resources ahead of time.

Code: IAEA/1/4
Committee: International Atomic Energy Agency
Topic: Nuclear Waste Management

The International Atomic Energy Agency,

Recognizing the utility of nuclear energy as a solution to the growing need for clean energy,

Fully aware of the GC(47)/RES/7 as well as the importance of Member States continuing to request IAEA safety reviews and to fund research on nuclear waste disposal in order to enhance security for nuclear, radiation, transport, and waste applications as it relates to the advancement of activities and technical elements,

Acknowledging the importance of safe and environmentally cautious disposal of nuclear waste, and the Agency's interest in finding a permanent solution to this problem, as shown by research projects such as the IAEA Coordinated Research Project (CRP) 1813 which calls for the fostering of knowledge sharing, cooperation, and advancement in high-level waste management,

Calling upon GC(65)/RES/9 to ensure that Member States have adequate access to safe and secure storage pathways for disused and spent nuclear material,

Aware of the Agency's institutional framework including the Board of Governors (Board) and the General Conference (GC) with its ambition to guarantee global peace, prosperity, and health through the peaceful use of nuclear technology as laid out in the *IAEA Statute* (1956),

Seeking measures to expand the Agency's budget and focus funds towards new initiatives regarding nuclear techniques for development and environmental protection, as is indicated in GC(66)/RES/2,

Affirming the importance of international cooperation and information exchange between Member States in the field of nuclear waste management in order to promote the development and implementation of practices securing a safe nuclear future,

Reiterating the *2030 Agenda for Sustainable Development* and especially the role of Sustainable Development Goal (SDG) 17, Partnership for the Goals, in strengthening the implementation of innovative solutions regarding nuclear waste management,

Alarmed by the possible economic strain associated with the creation of new nuclear programs and individual storage facilities, especially for developing nations outlined in IAEA's *Nuclear Energy for a Net Zero World* publication,

Supporting the establishment of regional cooperation and partnerships such as the African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology (AFRA) and similar which strive for strengthening scientific contributions in the areas of nuclear science to the socioeconomic development in these regions,

Acknowledging the crucial role and ongoing importance of the Committee on the Peaceful Uses of Outer Space (COPUOS),

Complimenting the Peaceful Uses Initiative (PUI), which supports technical cooperation projects in the areas of peaceful application of nuclear technology as a flexible vehicle to channel donor funding,

Regretting the missing focus on the potential of elaborate incentive schemes to boost private R&D efforts in the field of promising disposal technologies such as borehole technologies,

Recognizing the need for improved expertise within Member States' governing bodies pertaining to highly sophisticated economic policies which further the implementation of alternative disposal technologies, especially in developing nations,

Recognizing that the 2009 IAEA Specific Safety Guide No. SSG-1 *Borehole Disposal Facilities for Radioactive Waste* is in need of updating to the current year of 2023,

Reaffirming the need for cooperation among Member States between developed and developing nations to achieve SDG 9 concerning industry, innovation, and infrastructure,

Acknowledging tritium levels in water are directly associated with cancer risks, and increased tritium levels in ocean water should follow ALRA (As Low as Reasonably Achievable) to enforce IAEA standards,

Recognizing the importance of IAEA Safety Standard reports for protecting people and the environment on the Disposal of Radioactive Waste,

1. *Emphasizing* the importance of following the proper waste disposal procedures to ensure that all the disposal steps outlined in the Agency's *Policies and Strategies for Radioactive Waste Management* report are being followed by Member States, who can be assisted by IAEA experts who can give recommendations to Member States, upon request;

2. *Calls upon* an expansion of the IAEA Safety Standards Series No. WS-G-6.1 to research new materials and methods of storage for high-level nuclear waste by:

    a. Focusing on Crystalline materials, Thorium, and Glass-based Materials;

    b. Extensively researching these in the GHARR-1 nuclear research reactor to verify safety and sustainability procedures;

    c. Expanding efforts to find greater avenues of disposing of spent nuclear fuel which would establish connections between Member States looking to improve their own closed cycle strategies along with those that have the potential to establish these systems;

3. *Suggests* that Member States establish domestic and regional laws protecting the environment when approaching nuclear waste, such as:

    a. Laws stating that the introduction or release of radioactive waste into surrounding waters, soil, or the atmosphere is forbidden;

    b. To establish basic safety standards for the protection of all individuals potentially subjected to radiation;

    c. The *1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* on supplementary compensation for nuclear damage increasing funds allotted to those affected by nuclear disasters;

4. *Urges* to increase cooperation and knowledge transfer among Member States to ensure the best possible conduct regarding nuclear waste, facilitated through measures such as:

    a. Increasing the scope of the IAEA-Advisory Group on Nuclear Fuel Cycle Options and Spent Fuel Management (TWG-NFCO) to encompass research cooperation in the field of nuclear waste recycling, by:

        i. Increasing the membership of international experts from IAEA Member States to participate in the activities of the advisory group;

        ii. Strengthening cooperation between private corporations, state actors, and scientific research institutions through IAEA-facilitated exchange;

iii. Increasing the engagement of stakeholders to understand the current concerns of government agencies and civil society organizations;

iv. Conducting outreach activities such as workshops, webinars, and conferences to increase awareness and understanding of nuclear fuel cycle options and spent fuel management, thus engaging a wider audience and increasing the impact of the group's advice;

v. Publishing regular reports on advancements within the working group to inform on progress made in the fields of nuclear waste management, aiming to greatly reduce general skepticism within the public;

b. Endorsing the implementation of deep geological storage facilities utilizing the KBS-3 waste disposal method and facilitating realization through:

i. Utilizing the above-mentioned IAEA-Advisory Group to distribute knowledge and technical details on the KBS-3 method;

ii. Updating on the progress of this working group through the International Conference on Geological Repositories (ICGR);

iii. Allowing all IAEA Member States to gain expertise for their own nuclear programs;

c. Initiating a knowledge hub specifically for developing nations;

d. Working collaboratively with independent and international organizations such as the Organization for Economic Cooperation and Development (OECD) and the United Nations Environment Programme (UNEP);

5. *Designates* the utilization of regional partnerships such as AFRA or the Regional Cooperative Agreement for Research, Development, and Training Related to Nuclear Science and Technology for Asia and the Pacific (RCA) to cooperate on:

a. The establishment of shared, region waste-disposal facilities to distribute the financial burden of constructing, operating, and ensuring the security of such facilities;

b. The minimization of transportation distance for nuclear waste to reduce opportunities for leaks or other exposure during transit;

c. The establishment of regional organizations to jointly oversee the operation and security of nuclear waste disposal facilities;

d. The activation of these regional groups to serve as control mechanisms for the review of nuclear waste management practices in all nuclear active nations to ensure geopolitical peace and the involvement of non-nuclear Member States in upholding global safety regulations by:

i. Supporting current control mechanisms in line with the Agency’s mandate;

ii. Involving nuclear-inactive Member States in regulating nuclear programs;

iii. Closely cooperating with the Agency on these control groups;

e. Further Implementation of programs such as the Performance Assessment of Storage Systems for Extended Durations;

6. *Establishes* the IAEA Committee for the Economic Enhancement of Disposal Technology (CEDT) under the auspices of the Research Contracts Administration Section within the Agency's Department of Nuclear Sciences and Applications (RCAS);

7. *Calls upon* the work of CEDT which shall:

    a. Consist of ten independent economists with extensive knowledge of nuclear energy policies and their implementation in market and non-market economies suggested by the Board of Directors and elected by the General Conference *en bloc for a tenure of five years each*;

    b. Assist national governments in adjusting their economic policies to maximize the economic viability of promising disposal technologies (such as borehole disposal technology) upon request;

    c. Ensure that suggestions can be easily implemented and are in line with national priorities and needs;

    d. Invite Member States to send a delegation of three national stakeholders to work with CEDT on their cases;

    e. Present an annual report on its activities to the GC, and best practices shall be gathered in openly accessible guidelines;

    f. Hold annual CEDT conventions in Melbourne, Australia, while meetings with national experts are to be primarily held online;

    g. Be funded by a two-fold model of PUI funding and contributions by the respective government profiting from consulting;

    h. Be involved in creating a new IAEA Specific Safety Guide related to the construction and safety standards tied to the construction of borehole disposal facilities which updates the 2009 IAEA Specific Safety Guide No. SSG-1;

8. *Further requests* the Board of Directors to develop fee guidelines for the contributions by the respective governments profiting from consulting within CEDT;

9. *Recommends* Member States to work with the Electric Power Research Institute (EPRI), to identify potential regional locations for the temporary safe storage of nuclear waste for Member States by:

    a. Gathering possible expert opinion recommendations and geographical data regarding tectonic plate locations and movements;

    b. Being conscious of Member States located in Conflict-Affected and High-Risk Areas (CAHRAs);

10. *Stresses* the importance of the Verification Research Training and Information Centre utilizing triangular cooperation to allow for leapfrogging technologies and supporting regional cooperation for storing nuclear waste by allowing developing nations to work with developed nations who can share their information on technology to ensure that all Member States are able to properly dispose of nuclear waste;

11. *Requests* that the Technological Cooperation Programme (TCP) establish a committee that researches and allocates financial compensation to Member States that have been disproportionately impacted by nuclear waste mismanagement by:

a. Creating an emergency recovery fund, to which all Member States may contribute, from which Member States who suffered disproportionate effects will receive larger contributions;

b. Holding interregional meetings about the establishment of said committee and its international interactions;

c. Encouraging the involvement of both the affected Member States as well as those originally responsible for the nuclear mismanagement;

12. *Promotes* responsible nuclear waste management practices and considers future nuclear energy sources according to IAEA standards to prevent irradiation of ocean waters, especially with regards to tritium levels, through preventing:

    a. Nuclear waste management facilities from being located within close proximity to oceans on account of increasing climate change-related natural disasters;

    b. Widespread risk of dumping radioactive materials and nuclear leakages.

Code: IAEA/1/5
Committee: International Atomic Energy Agency
Topic: Nuclear Waste Management

The International Atomic Energy Agency (IAEA),

Recognizing that the three pillars of the United Nations, Peace & Security, Development, and Human Rights are interlinked and that work on one of them has an impact on the other ones and nuclear waste management has effects on all pillars as well,

Acknowledging the Spent Fuel and Radioactive Waste Information System's data of 2,221,499 cubic meters of total waste and the 92,616 metric tons of heavy metal stored in 294 storage facilities and 31 waste disposal facilities worldwide,

Affirming the efforts made by the IAEA's Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS) and the necessity of implementing ARTEMIS in developing countries to aid in the improvement and development of nuclear waste management systems,

Believing that nuclear energy significantly contributes to achieving Sustainable Development Goal (SDG) 7 (Climate Action), having a minimal carbon footprint, and providing safer nuclear waste disposal is essential for the sustainability of nuclear energy production itself,

Fully aware of the inequalities across Member States in facilities for technological research and development and the discrepancies in knowledge surrounding the disposal of nuclear waste,

Acknowledging the need for increased cooperation in the international community regarding safe nuclear waste management and the importance of providing context-specific solutions, considering local and regional differences,

Prioritizing the role of research in identifying the most sustainable and accessible nuclear waste practices, as encouraged by SDG 9 (Industry, Innovation, and Infrastructure) indicator 5 (Research and Development),

Affirming the IAEA's mission to promote knowledge exchange as well as the work completed by the African Commission for Nuclear Energy (AFCONE) with the establishment of the *Technical Cooperation Programme* (TCP),

Emphasizing the value of Coordinated Research Projects (CRPs) in creating a cooperative link between global academia and regional administrators of nuclear facilities,

Affirming the importance of IAEA's *Technical Report Series* (TRS) in providing Member States with technical guidelines and providing a venue for knowledge sharing,

Recognizing the production of radioactive waste by point sources other than nuclear power facilities, such as coal burning and medical equipment,

Appreciating the *Nuclear Threat Initiative* (NTI) a global security organization focusing on reducing nuclear and biological environmental threats by gathering information internationally,

Deeply disturbed by the IAEA 2022 *Report Status and Trends in Spent Fuel and Radioactive Waste Management* that only 19 percent of the 38 million cubic meters of solid radioactive waste are in final disposal,

Noting that the lack of gender parity in the nuclear power sector is not in congruence with SDG 5 (Gender Equality),

Recognizing the creation of scholarships that aim to decrease the gender gap, specifically the Marie Sklodowska-Curie scholarships (MSCFP),

Underscoring the lack of safety measures against natural disasters in the nuclear facilities, containing nuclear waste,

Expressing appreciation for the work done by the committees of the IAEA,

Appreciating the work done by the International Commission on Radiological Protection (ICRP) regarding the protection of animals, the environment, and humans from radiation,

Keeping in mind the lack of educational resources for workers regarding nuclear waste management,

Stressing the limited nature of the *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* (Joint Convention) concerning reporting requirements,

1. *Proposes* that the CRPs work with Member States to implement themes of ARTEMIS through the International Commission on Radiological Protection partnering with the IAEA's Waste Safety Standards Committee and the Radiation Safety Standards Committee in order to create a network that promotes the exchange and maintenance of knowledge for future generations entitled Network for Nuclear International Cooperation and Education (NNICE) and:

    a. Recommends that the network promotes communication, the exchange of current and future knowledge and materials, and waste management monitoring through the implementation of an interactive network of scientists, engineers, training staff, and the physical materials necessary to safely and sustainably implement nuclear waste systems;

    b. Encourages the participation of undergraduate universities in the scientific exchange to facilitate youth participation similar to the emphasis on Masters, PhDs, and introductory research by the CRPs;

    c. Put forward safe disposal solutions for the needs of their respective states;

    d. Draws attention to the sharing of storing nuclear waste in canisters surrounded by clay-rich blocks to secure a system of long-term storage that has a high containment ability;

    e. Hold Member States accountable for the safety of their nuclear waste procedures by performing regular inspections and reporting;

    f. Effectively manage and implement practical disposal systems by:

        i. Putting forward safe disposal solutions for the needs of their respective states;

        ii. Providing training for workers to accurately manage the disposal system;

2. *Proposes* to all Member States the creation of the Nuclear Science Collaborators Forum: (NSCF), a Social Media Application in association with the AFCONE in order to encourage the creation of nuclear facilities in the continent and the rest of the world, promoting knowledge and human capital exchange by:

    a. Displaying User Accounts' *Curriculum Vitae*, specific work area, time of experience, degree title, and any other educational achievements, as well as the area of residence, family status, official credentials in the form of a collegiate, and other key points that may be searched by the hiring parties;

b. Showing the hiring parties location, proposed time of hiring, family and housing benefits, positions required, location of the job positions, naturality of the enterprise, if it's either public or private;

c. Hosting forums, magazines, official publications, and other educational events with the cooperation of IAEA scientists, and other NGOs like the Brazilian Association for the Development of Nuclear Activities (ABDAN);

3. *Calls upon* Member States to expand the application of TCP to further international cooperation and to ensure the availability for optimal resource exchange;

4. *Invites* Member States to adopt various specialized CRPs by the IAEA that focus on aspects like bridging technological and informational gaps within regional blocks such as:

    a. Projects that will create cooperative frameworks between institutions of higher education and regional administrators;

    b. Regional projects that will focus on aspects of establishing databases, promoting research, and transferring appropriate technology;

5. *Recommends* to all Member States the creation of a new division within the IAEA Department of Nuclear Safety and Security called the Ray Cat Network, which will:

    a. Encourage technological infrastructure transfer, similar to the IAEA's TCP;

    b. Take control and expand upon the existing web-based repository Global Nuclear Safety and Security Network;

    c. Assist Member States upon request in creating national knowledge profiles that contain cooperative mechanisms in nuclear information sharing;

    d. Handle long-term communication intelligence under the project "Picturing Nuclear Safety for Future Generations" and suggests for the International Council of Design and United Nations Educational, Scientific and Cultural Organization to partner and fund the project to create nuclear isotypes that can be tangibly accessed on the grounds of nuclear waste disposal sites;

6. *Emphasizes* the good practice of only using necessary quantities when it comes to radioactive materials in hospitals and non-nuclear industries, such as X-ray sources, diagnostic tools, stocks of isotopes (mainly Iodine-131 and Cobalt-60), imaging equipment, research, and development;

7. *Recommends* Member States and the IAEA to exchange best practices on waste management by participating in newly established semi-annual Naturally Occurring Radioactive Material (NORM) summits by:

    a. Creating agendas to discuss waste disposal licensing under the guidance of ARTEMIS experts;

    b. Opening communication channels for Member States to work jointly on the disposal of waste created in the extraction of NORM to:

        i. Facilitate coordination of issues arising through the activities of multinational companies in various Member States such as health and labor hazards;

ii. Exchange knowledge regarding the illegal extraction of NORM and the illegal disposal of NORM waste;

iii. Encourage Member States to make use of and maintain these communication channels to clarify responsibilities arising from multinational companies extracting NORM outside of their country of origin;

8. *Recommends* the General Assembly to adopt strategies and technologies from the NTI such as the voluntary tracking of nuclear waste potentially usable for the proliferation of radioactive materials, by working closely together and encouraging other Member States to financially support scientific research on nuclear waste disposal and the tracking of such materials;

9. *Requests* sponsorship of programs within public education that promote learning surrounding nuclear production and nuclear waste such as:

a. A collaborative writing competition that will involve younger generations in the field of nuclear science in which the winning team will have found the best innovative technology regarding nuclear waste production and management;

b. Providing research materials produced by the IAEA that will focus on explaining nuclear waste, and emphasizing how to recycle or dispose of the waste properly will be provided to the participants and their respective schools;

c. Periodically ensuring the curriculum and materials are being used appropriately;

10. *Suggests* to all Member States the establishment of an IAEA research center focusing on the security of storage facilities and the efficiency of nuclear waste containment facilities by:

a. Expanding the usage of robotics, specifically to safely and efficiently entering for humans hazardous and hard-to-reach areas;

b. Improving cyber security measures:

i. To counter the increasing threat of cyber-attacks;

ii. Specifically targeting the improvement of firewalls and the training of employees;

c. Increasing the usage of artificial intelligence while recognizing it as the most promising technology for increasing the safety of nuclear power plant operations since it is able to detect faulty operating conditions early and trigger a response rapidly by:

i. Using the newly developed Laser Curtain for Containment and Tracking system which would create a “virtual box” around safeguarded items and materials that monitors the facilitated materials;

ii. Alerting when activity is sensed around them;

d. Developing a fully digital and automatic energy management system designed to:

i. Increase efficiency regarding nuclear waste facilities through constant check-ups of the guiding system and automatic resolving of problems causing a decrease in efficiency;

ii. Optimize energy consumption and emissions by minimizing energy-intensive sectors of the storing process through the use of artificial intelligence as previously described in sub-clause (c);

11. *Urges* the use of Technical Cooperation Funds (TCF) and Peaceful Uses Initiative (PUI) to advance and modernize nuclear infrastructure in developing nations by:

    a. Further utilizing TCFs to help advance nuclear storage technology and safety in developing nations, including multi-containment units, emergency mitigating equipment, and other technological safeguards;

    b. Expanding the PUI to improve immediate assistance available to Member States who request aid;

12. *Suggests* for Member States to actively participate in the CRP concerning the further investigation of the use of deep borehole disposal as a means to permanently discard radioactive nuclear waste;

13. *Recommends* Member States that have nuclear power plants to create a consumption-based fee system that:

    a. Defines the cost of discarding units of nuclear-spent fuel in the Member States' currency;

    b. Calculates the cost of fuel disposal per Kilowatt-hour of energy produced;

    c. Bills consumers of nuclear power according to their consumption to have their used fuel accounted for;

    d. Uses the funds generated to finance the disposal of the spent fuel used;

    e. Gives Member States, private companies, and intermediates the opportunity to cover the accumulated fees;

    f. Incentivizes the transformation to renewables to reach SDG 7;

    g. Accounts for the running costs of permanent storage facilities for nuclear waste but excludes the cost of construction of set facilities;

    h. Prioritizes the funding of storing vitrified fuel elements to prevent future usage of malicious intent;

14. *Requests that* the General Assembly creates a forum comprised of experts as well as UN organs such as the International Energy Agency (IEA), that will have the mandate to develop innovative ways to render waste reprocessing technologies affordable, which will:

    a. Serve as a ground for sharing knowledge between Member States which are a part of the IAEA;

    b. Meet plenary every 2 years;

    c. Be funded by Member States on a voluntary basis through their respective nuclear programs and NGOs such as the World Association of Nuclear Operators;

    d. Emit a yearly report of its activities, available to all IAEA members, thereby allowing such Member States to stay updated on new technologies;

15. *Calls for* the amendment of article 3(3) of the Joint Convention to not only apply the safe management of spent nuclear fuel and nuclear waste originating from non-civilian activities when it occurs within civilian activities but to additionally encourage Member States to commit to the same application when this spent fuel and waste stemming from non-civilian activities occurs in general;

16. *Calls* for the voluntary establishment by Member States of a research study on current nuclear storage sites/power plants and their abilities to withstand:

    a. Natural disasters such as earthquakes and tsunamis;

    b. Man-made disasters such as terrorist attacks, artillery fire, and shelling;

17. *Stresses* the need for technology transfer and encourages Member States to provide access to emerging technologies without discriminatory barriers for others, including:

    a. Sharing the technology itself and the experience of its use and implementation;

    b. Development of advanced nuclear reactors and fuel reprocessing technologies;

18. *Emphasizes* the importance of local and regional cooperation in order to create context-specific solutions, specifically regionally-specialized CRPs;

19. *Recommends* Member States to establish economically feasible closed-cycle technologies by:

    a. Providing educational and financial support for research activities, in particular through funding and academic participation from voluntary Member States;

    b. Creating additional national and joint international research programs for closed-cycle technologies;

    c. Supporting the creation and participating in more CRPs considering pyro processing techniques to further the cost-effectiveness of closed-cycle strategies;

    d. Building research laboratories to generate new knowledge about nuclear waste as well as to pre-test new techniques and strategies;

    e. Encouraging youth to participate in the research activity by providing scholarships for young scientists;

20. *Recommends* provision of training for young professionals in the nuclear field, especially women, following the Women in Nuclear (WiN) initiative;

21. *Fully supports* the increased funding of the MSCFP for promoting women's involvement in the nuclear field;

22. *Recommends* the continued expansion of the IAEA's partnerships among nuclear education and training institutions across the globe to promote worldwide understanding of the importance of safe and sustainable, use and disposal, of radioactive properties;

23. *Encourages* Member States to utilize medically useful radioactive materials to ensure safe disposal through:

    a. Keeping materials segregated and contained until their half-life has been reached, thereby reducing the risk of future misuse;

b. Further research in any and all possible avenues of repurposing and reuse;

24. *Encourages* Member States to initiate an educational program regarding nuclear safety, sustainability, reprocessing, and recycling, and recommends the IAEA to periodically test the standards if they're being respected;

25. *Advocates* for the IAEA Department of Safeguards to add a safeguard stipulating that any new nuclear reactor complying with IAEA standards develops and implements a plan for recycling nuclear waste within five years of the reactor's first start, thus:

    a. Profits from the reactors would be able to be used to help the repurposing effort to ensure continued progress;

    b. The IAEA shall propose plans for nuclear waste repurposing, available to Member States who request it;

    c. Member States shall produce follow-up reports indicating progress including information such as:

        i. The efficiency of repurposing processes, such as efficiency percentages, isotopes produced and used for energy production, and composition of discarded waste;

        ii. The state of recycling facilities and the methods used for repurposing;

26. *Invites* Member States to participate in the Bioclimatic Green Agenda (BGA) in order to engage in the discussion regarding the effect of current management of nuclear facilities, so as to improve the preparation for potential scenarios caused by the gestion of nuclear waste, making it possible through the IAEA by discussing topics that Member States deem to be relevant in the betterment of nuclear waste handling with special emphasis on:

    a. Low-fixed interest loans and grants for developing nuclear facilities;

    b. Regional nuclear reprocessing plants;

    c. Cyber-security in nuclear facilities;

    d. Promote the participation of women in the nuclear energy industry;

    e. Regional and International expansion of access to nuclear energy;

    f. Safety protocol revisions in the atomic energy industry;

    g. Funding and economic resource management for the nuclear energy industry;

    h. Viability of nuclear waste recycling;

    i. Nuclear waste transportation regulatory limitations;

    j. Human capital and knowledge exchange for the improvement of nuclear waste facilities;

    k. Neutron and gamma ray detection systems for the prevention of fissile materials trafficking;

    l. The effects of radiation on the environment, water sources, and wildlife;

    m. Global challenges in solving nuclear weapons issues;

n. New fissile material that's friendlier towards the environment.

Code: IAEA/1/6
Committee: International Atomic Energy Agency
Topic: Nuclear Waste Management

The International Atomic Energy Agency,

Believing in the mission of the United Nations (UN) under Chapter I, Article I of the *Charter of the United Nations* (1945) on the development of friendly international collaboration based on empathy and respect among nations in efforts to strengthen global peace and security,

Recognizing the importance of the Sustainable Development Goals (SDGs) of the *2030 Agenda for Sustainable Development* (A/RES/70/1) (2030 Agenda) regarding Nuclear waste management, specifically highlighting SDGs 14 and 15 which focus on improving life below water and on land,

Recognizing the efforts of the IAEA's Technological Cooperation Programme (TCP) which contains 1250 unique educational and informational programs around the globe, serving as the groundwork for all future nuclear information-sharing approaches,

Welcoming the extra-budgetary funds provided to the Office for the Disarmament Affairs for the development of innovative nuclear technology and encourages Member States in positions to do so, to consider how they can further contribute to the Office for the Disarmament Affairs work in this area,

Applauding advancements in the medicinal field by using nuclear waste for innovative medical treatments such as using unsealed radioactive isotopes for medical treatment,

Reaffirming the already existing work of the International Project on demonstrating the safety of geological disposal (GEOSAFE) harmonizing the representation of the safety of geological disposal facilities during and after their operation,

Acknowledging that nuclear waste management is a crucial aspect of achieving sustainable development and reducing the impact of human activities on ecosystems,

Recognizing the potential environmental, health, and economic impacts of improper nuclear waste disposal, including pollution of air, water, and soil, greenhouse gas emissions, and public health hazards,

Acknowledging the role of government, industry, and individuals in promoting nuclear waste reduction, reuse, and recycling, as well as in developing and implementing effective nuclear waste management policies and practices,

Emphasizing the importance of education and awareness-raising programs to promote responsible nuclear waste management practices among citizens and stakeholders globally,

Establishing educational programs and resources working towards the long-term success of implemented frameworks regarding nuclear waste disposal methods,

Recognizing the growing importance of managing nuclear waste in a sustainable and environmentally responsible manner as the global energy demand increases,

Noting that nuclear waste management is expected to account for nearly 22% of the IAEA's 2023 budget, jumping from 17% the previous year indicating a growing need for economically feasible nuclear waste management solutions,

Recognizing the need for international cooperation and coordination to address the global challenges of nuclear waste management, including the growing volumes of nuclear waste generated, the lack of infrastructure and resources in some regions, and the need to reduce the environmental and social impacts of nuclear waste disposal,

Acknowledging the concerns of non-nuclear weapons states regarding the risks of nuclear proliferation arising from nuclear waste, and supporting efforts to promote disarmament and non-proliferation goals through effective nuclear waste management practices,

Reiterating the crucial role of multilateralism in the elaboration of concrete solutions for nuclear waste management, particularly in sharing knowledge and expertise in developing effective solutions,

Recognizing the significant risks such as sabotage, theft, leakage, terrorism, and mismanagement associated with the transportation and storage of nuclear waste, and the need for appropriate safety measures and regulations to ensure the protection of communities and the environment,

Appreciating the valuable information disseminated through institutions such as the IAEA's Nuclear Law Institute (NLI) which will bring together professionals of relevant fields for intensive training in nuclear law and policy on an annual basis,

Highlighting the importance of global and regional cooperation in developing resilient frameworks for appropriate nuclear usage and management practices, especially through Regional Training Centers (RTCs),

Having devoted attention to the IAEA's Annual General Conference,

Acknowledging the topics thus far not adequately discussed in previous conferences,

Recognizing the work of the experts of the Integrated Review Service for Radioactive Nuclear Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS) to review and approve practices and procedures regarding nuclear waste and nuclear power,

Reaffirms the importance of Member States requesting a review from ARTEMIS's panel of experts and incorporating best practices and feedback given by ARTEMIS,

Supporting unequivocally the peaceful application of nuclear technology and its environmental, economic, and scientific benefits as outlined by the Treaty on the Non-Proliferation of Nuclear Weapons,

Prioritizing the use of nuclear waste for innovative purposes, such as processing for clean hydrogen production,

Understanding the concerns of Member States about nuclear waste disposal sites being located close to national borders and affecting other nation's populations,

Acknowledging the potential of thorium as an alternative and more secure and stable nuclear fuel, in regards to half-life and the capability of being weaponized,

Understanding the potential use of Molten Salt Reactors (MSRs) as a means of safely altering the Thorium cycle and consequently making nuclear fuel and waste energy more easily reprocessed,

Applauding the efforts of the IAEA's International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) in creating the Nuclear Energy System Economics Support Tool (NEST), which assists INPRO Member States in performing financial comparisons of open and closed fuel cycles based on their individual characteristics in order to allow them to make informed economic decisions on nuclear energy and nuclear waste management,

Highlighting the importance of information exchange between member states on nuclear waste management to reduce the information gap between developed and developing countries and promote nuclear energy technologies worldwide taking into account the relevant role of nuclear waste management companies and organizations,

Approving the IAEA's utilization of Coordinated Research Projects (CRP), most specifically, the recently worked *Deep Borehole Deposit Options (2022)*,

Acknowledging the danger of radiotoxic isotopes and elements in all environments as outlined by the IAEA showing direct association with health risks, and should follow as low as reasonably achievable (ALRA) to promote public health,

Recognizing that as of the end of 2020, the global inventory for spent nuclear fuel was 430,000 tons of heavy metal but only 30% of the global inventory was reprocessed,

Recalling the IAEA's *Specific Safety Requirements No. SSR-6 (Rev. 1) - Regulations for the Safe Transport of Radioactive Material* established under the terms of Article III of the *Statute of the International Atomic Energy Agency*,

Appreciating collaborative deals between member states that serve to aid the global insurance of meeting all sustainable development goals within the 2030 Agenda,

Considers the research in the IAEA's *Fast Reactors and Related Fuel Cycles* regarding challenges and opportunities of nuclear waste innovation,

Expresses its support for the positive trends regarding environmental remediation laid out in the IAEA's *2022 Nuclear Technology Review,*

Recognizes the threat posed by mismanaged nuclear waste to the world's critical waterways and overland trade routes,

Emphasizing the lack of specific protocols of Member States regarding the management of nuclear waste transported by land and sea,

Supporting full cooperation between member states to establish safe routes of transportation for nuclear waste globally,

Taking into account the emerging importance of technology in tracking nuclear waste while in transport,

Acknowledging the previous environmental disasters of Chernobyl in 1986 and Fukushima in 2011,

Recognizing the growing importance of managing nuclear waste in a sustainable and environmentally responsible manner as the global energy demand increases,

Concerned but hopeful regarding environmental remediation relating to the effects of climate change and that they rarely have access to environmentally sound laid out in the 2022 Nuclear Technology Review,

1. *Calls* for renewed support for the Technological Cooperation Programme (TCP) as the groundwork for all education and technology-sharing efforts through:

    a. The continued financial support of the existing 1250 global programs, which have been agreed upon by all states party to the agreements;

    b. International intellectual and professional cooperation on the creation of additional TCP efforts which enhance the global nuclear intelligence network;

2. *Emphasizes* the importance of sustainable nuclear waste disposal and reprocessing through:

    a. Environmentally friendly solutions and tactics in the realm of nuclear waste disposal;

    b. IAEA ensures ethical approaches toward nuclear waste reprocessing;

    c. Implementing the use of Molten Salt Reactors (MSRs) in the disposal and reprocessing of nuclear waste as:

        i. MSRs dissolve the fissile and fertile fuels in salts during the Thorium fuel cycle altering the production of nuclear fuel and waste energy

ii. Using molten fluoride salts as coolers ultimately allows nuclear waste fuel to be easier to reprocess as it dissolves the fissile salts;

3. *Highlighting* the need for innovation in developing nations' infrastructure by:

    a. Creating equitable frameworks to allow for effective disposal in developing states by:

        i. Utilizing NGOs like the Nuclear Waste Management Organization and Energy for Humanity to ensure efficient and effective disposal methods;

        ii. Implementing projects such as PRISM and GEOSAFE that are used for the management of geo-disposal facilities;

    b. Ensuring the longevity of such frameworks by continuing regular funding and making a fiscal plan that applies to nations of all different financial calibers for years to come; Affirming the ability of deep geological repositories to effectively and safely dispose of high-level nuclear waste;

    c. Urging collaboration between developed and developing nations to facilitate the transfer of knowledge and technology to ensure these developing nations can utilize the expertise and technology of developed Member States to establish these repository sites;

4. *Recommends* Member States investing in NGOs/private sector investors to create reliable medicinal nuclear technology in Member States with a lack of nuclear medical technology which produces less radioactive waste by:

    a. Improving diagnostic tools to decrease the amount of radiation patients may be exposed to;

    b. Evaluating the efficiency and use of nuclear medicine to treat cancer and other diseases;

    c. Focusing on the implementation and resource aid to smaller developing countries with primitive medical equipment;

    d. Suggesting the creation of a research initiative to determine the dangers of nuclear waste in healthcare settings;

5. *Considers* the research in the IAEA's *Fast Reactors and Related Fuel Cycles* regarding challenges and opportunities of nuclear waste innovation which:

    a. Encourages research on fuel cycles that can recycle nuclear materials;

    b. Uses research from the IAEA's *Spent Fuel Performance Assessment and Research* to determine the best method to recycle nuclear waste;

6. *Suggests* supporting educational systems and international education resources to inform nations on the importance of, innovational possibilities, and benefits of reusing nuclear waste and utilizing nuclear energy sources through means such as:

    a. Using the Convention on the Safety of Radioactive Waste Management as a forum for further discussion on this issue;

    b. Helping Member States by hosting regional training centers put together by the IAEA by developing and providing tools focusing on training in radiation, transport, and

nuclear waste safety; to increase state capabilities to handle and address their own nuclear waste concerns presently and down the line;

c. Using the Nuclear Education, Skills, And Technology Framework (NEST) when working to address nuclear skills capacity building, knowledge transfer, and technical innovation in an international context all while filling in the educational gaps in regard to such topics;

7. *Recommends* Member States to expand the IAEA E-Platforms such as the E-learning on Spent Fuel and Radioactive Waste Management, Decommissioning, and Environmental Remediation, which offers free, public online learning courses on policies, strategies, and safety case development focusing on disposal and nuclear waste management methods;

8. *Encourages* the use of triangular cooperation between nations in the global North, South, and beneficiaries to modernize the nuclear technology in developing nations under the following conditions:

    a. Aid should be focused on:

        i. Nuclear technology;

        ii. Repository sites;

        iii. Nuclear waste sustainability;

        iv. Nuclear waste depositories;

    b. Member States will not be required to participate in triangular cooperation;

    c. Member states will be able to create partnerships with other member states and negotiate what NGOs and/or private sector investments will be used;

    d. Member states will not promote an individual agenda but rather provide aid to nations that request it type of technology that is given to global south nations will aid said nations in optimizing the use of nuclear energy and nuclear waste;

9. *Encourages* the adoption of Member States developing and implementing the Climate Objectives for Universal Resilience, Adaption, and Granting Equity (COURAGE), a set of guidelines that works towards universal cooperation and adaptable solutions, as well as encourages equal opportunity for all Member States for the purpose of aiding safe nuclear waste management through:

    a. Establishing new Opening Regional Initiatives (ORI) that mimic the Open Balkans Initiative, allowing Member States to participate in open and voluntary trade of nuclear waste;

    b. Developing adaptable solutions surrounding the issue of nuclear waste management;

    c. Acknowledging the environmental impacts and the effects on human health from ineffective nuclear waste management;

10. *Suggests* that Member States implement COURAGE guidelines as they see fit to:

    a. Encourage regional distributions of responsibilities to minimize risk factors and create adaptable solutions to future issues;

    b. Enhance the enforcement of safe radioactive management;

    c. Protect vulnerable populations from the potential dangers of unsafe nuclear waste transportation;

    d. Install vocational training programs and educational opportunities for young people;

11. *Encourages* the ideals of Climate-Resilient Adaptive Peacebuilding (CAP) to be adapted to the storage and transport of nuclear waste by:

    a. Creating sustainable economic models that recognize the sovereignty of the state's decisions for the trade of goods and nuclear waste;

    b. Preserving climates of the regions impacted by nuclear waste storage;

    c. Unwarranted dumping, importation, and transportation of hazardous material;

    d. Developing Member States and the burden of the storage and disposal of nuclear waste and hazardous material is shared between states in a collaborative manner;

12. *Further recommends* Member States join the International Network of Laboratories for Nuclear Waste Characterization (LABONET), a network for cooperation to develop and enhance practical approaches for managing Low-Level Waste (LLW) and Intermediate-Level Waste (ILW) efficiently;

13. *Recommends* the NLI invite representatives from Member States to provide them with expertise and training on the implementation of legal frameworks to support ARTEMIS best practices and up-to-date methods for the storage and elimination of nuclear waste;

14. *Recommends* Member States with nuclear programs to request a review from ARTEMIS's panel of experts and incorporate best practices and feedback given by ARTEMIS;

15. *Calls upon* the utilization of existing regional training centers (RTCs) for the hosting of annual regional conferences, at one of the region's existing RTC facilities, at a time agreed upon by attendees within that region, with attendees including a delegation of international experts and policy-makers from each country, as well as IAEA ARTEMIS panelists with the purpose of sharing:

    a. Up-to-date ARTEMIS reports on best practices within regional groups, to ensure scientific exchange and efficiency;

    b. Locations of geological deposits and surveys of potential new locations for nuclear waste storage, especially those near national borders or cross-national waterways;

16. *Recommends* the elaboration of training provisions for young professionals in the field of nuclear waste management; particularly for women, following the Women in Nuclear (WiN) initiative, through the increased funding of national initiatives promoting the integration of women in the nuclear waste management sector, such as the Marie Skłodowska-Curie scholarships (MSCFP) for promoting women's involvement in the nuclear field;

17. *Encourages* all Member States, both those that contain nuclear reactors/facilities and non-nuclear powers, to form an annual Assembly to Optimize Nuclear-Waste Management (ATOM) Summit to share current knowledge surrounding nuclear waste management:

    a. Share current knowledge surrounding nuclear waste management, transportation systems, environmental safety, and updated technologies, thus every nation can benefit from the newest form of nuclear waste management regarding transportation;

b. Include experts panels detached from a nation's influence like the Nuclear Energy Institute (NEI) which contains companies owning or operating power plants, engineering firms, and research laboratories, amongst others;

c. Further emphasizes the use of CRPs as a solution for improving international cooperation efforts;

d. Center a Financial Commitment Dialogue where developed nuclear powers and non-nuclear states aim to negotiate on contributions given by each party to improve existing partnerships focused on nuclear waste management systems;

e. Having the week-long summit be held yearly in October which will be rotated between participating Member States;

f. Implementing international fellowships and scientific visits in such a way that it enables researchers from other member states to learn how to better manage disused sealed nuclear material;

18. *Supports* Member States' access to global communication highways and cost-effective innovations for closed cycle strategies of spent nuclear materials by increasing the number of specialized CRPs by:

    a. Implementing regionally specialized CRPs;

    b. Establishing project relationships between developed and developing countries through, standardizing innovation throughout the international community;

19. *Suggests* the creation of a global database of companies and organizations willing to commit and promote standards of accountability, transparency, and sharing of nuclear waste management knowledge globally, with all:

    a. The companies that can be included in this database will be those that work with the management of nuclear waste;

    b. A designated national authority will have exclusive access to the platform, therefore, companies will forward the information to the designated national authority;

    c. The international committee will evaluate the reports and make recommendations to the states;

    d. All the enterprises of the member states included in the initiative will have access to the shared information and promote better implementation of the best practices in nuclear waste management;

20. *Calls upon* governments at all levels to adopt comprehensive and integrated waste management plans that prioritize nuclear waste prevention and reduction, promote sustainable consumption and production, and ensure proper disposal of hazardous and non-hazardous nuclear waste by:

    a. Ensuring that all nuclear facilities have disposal options like surface storage, deep geological disposal, and incineration;

    b. Sending nuclear waste management experts to Member States in need in order to improve their management and facilitation best practices;

c. Training and hiring local instructors, specifically from marginalized communities, to support local economies helping to eliminate the energy gap between countries and foster inclusion in nuclear policy-making and enforcement;

21. *Suggests* the promotion of extended producer responsibility mechanisms in the Global South that require producers to take responsibility for the entirety of the life cycle of their products such as the Polluter's Pay Policy (PPP), through the management of nuclear waste generated during production, distribution, use, and disposal;

22. *Strongly suggests* Member States, collaborating with the IAEA and in aid of NGOs, continue the use of deep geological disposal and create artificial caves to:

    a. Prevent nuclear waste incidents;

    b. Enhance already existent strategies to maximize safety;

    c. Include the disposal of high-level nuclear waste;

23. *Supports* international efforts to foster research and innovation in the nuclear power sector, including the development of new technologies that can improve nuclear waste management and disposal methods, while also minimizing the risks associated with nuclear energy production;

24. *Recommends* Member States to expand the IAEA E-Platforms such as the E-learning on Spent Fuel and Radioactive Waste Management, Decommissioning, and Environmental Remediation, which offers free, public online learning courses on policies, strategies, and safety case development focusing on disposal and nuclear waste management methods;

25. *Recommends* expanding the Joint ICTP-IAEA International School on Radioactive Waste Cementation, which shares nuclear waste disposal knowledge between States and record keeping through convening technicians and regulatory authorities for training workshops and virtual meetings for enhanced information sharing;

26. *Advises* Member States to establish regional multilateral agreements to:

    a. Transfer undesired spent nuclear fuel to other Member States within the same region that would employ such fuel for reprocessing purposes;

    b. Enable a system of exchange where the sending countries are compensated for their transfer of spent nuclear fuel;

    c. Monitor the amount of said transferred spent fuel as well as ensure its arrival to the receiving Member State utilizing IAEA ad hoc inspections within the framework of comprehensive safeguards agreements;

27. *Emphasizes* the importance of fertile nuclear fuel in regard to nuclear waste disposal and reprocessing by:

    a. Working towards finding an alternative, more stable, and secure nuclear fuel;

    b. Ensuring responsible approaches towards nuclear waste reprocessing zones;

    c. Implementing the use of Molten Salt Reactors (MSRs) in the disposal and reprocessing of nuclear waste;

28. *Encouraging* the future use of thorium as outlined in the IAEA-TECDOC-1450 by:

a. Further establishing thorium mining facilities for research and reactors, e.g. the Indian FBTR Thorium Reactor;

b. Strengthening the coordination of knowledge between Member States and universities through CRPs funds to projects on anti-corrosive alloys and metals, and to cope with the higher sintering point of Thorium;

c. Promoting the exploration for alternative vitrification fuel as a viable solution for preserving the environment and lessening the dependency on uranium and plutonium-based vitrification fuel;

29. *Proposes* the implementation of equitable frameworks for effective disposal of nuclear waste in developing countries by:

    a. Utilizing NGOs like the Nuclear Waste Management Organization and Energy for Humanity to carry out framework operations and objectives in Member States;

    b. Advising Member States to collaborate with the IAEA in projects for the management of geo disposal facilities such as PRISM and GEOSAF;

30. *Encouraging* the international community to consider the installation of a storage unit based on the Spanish system of the Centralized Temporary Storage Facility (CTSF) in each country expressing the desire to do so by:

    a. Creating a community of countries that will follow Spain's model in the CTSF construction;

    b. Ensuring the longevity of such framework by continuing regular funding and making a financial plan that applies to nations of all different financial calibers for years to come;

31. *Affirming* the ability of deep geological repositories to effectively and safely dispose of high-level nuclear waste by:

    a. Urging amicable financial and technological collaboration between developed and developing Member States;

    b. Facilitating the transfer of knowledge and technology to ensure the continued and numerous establishment of these deep geological repositories on a large scale across all nations;

32. *Recommends* IAEA-Member States to collaborate for the utilization of Artificial Intelligence (AI) technology, including but not limited to drones, by:

    a. Suggesting the use of the Little Sunfish robots that are utilized in leakage zones and decommissioned facilities, to collect data and clean sites without risking human exposure;

    b. The database of information will be fortified, encrypted, make use of blockchain technology to prevent a data leak or cyber-attack;

33. *Encourages* the expansion of existing programs under the TCP to accommodate growing efforts of regional cooperation in securely outsourcing and managing the reprocessing of nuclear waste through mechanisms such as the Peace Uses Initiative (PUI) and African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology (AFRA) to ensure that nuclear material is properly and securely

managed through Member States within the AFRA region containing low and intermediate nuclear waste striving to:

a. Properly manage current nuclear waste within respective management programs in which each Member State will interact on a case-by-case basis;

b. Systematically transport nuclear waste through the PUI program ensuring the proper oversight and accurate documentation during transportation;

34. *Emphasizes* the importance of sustainable nuclear waste disposal and reprocessing, working with developing countries on the possible solutions used to properly dispose of spent fuel; utilizing international research resources globally with the goal of properly and safely recycling radioactive material:

    a. Works towards environmentally friendly solutions and tactics in the realm of nuclear waste disposal;

    b. Limiting the amount of excess nuclear waste produced;

    c. Breaking down spent fuel into uranium and plutonium and recycling to produce new reactor fuel;

    d. Placing an emphasis on continued research in reprocessing focusing on sustainability and environmentally friendly processes;

35. *Encourages* the further creation and implementation of safe and peaceful nuclear intergovernmental agreements to create new nuclear facilities through voluntary authorization, from the Member State gaining nuclear plants, of organizations (such as ROSATOM) thus fitted properly to fund and build nuclear facilities to operate and own those facilities in the Member State's provided land (for a minimum of 60 years with the ability of extensions) in exchange for:

    a. Reprocessing technologies;

    b. Fixed-rate agreements on energy buyback with a trade advantage for the Member State (for 15 years with the ability of extensions);

    c. Exported nuclear waste disposal sites provided via responsible organizations;

    d. Decommissioning and upkeep provided via responsible organizations;

36. *Encourages* the implementation of nuclear waste reduction, reuse, and recycling programs in all sectors of society like business and government to minimize the amount of nuclear waste generated and promote a circular economy;

37. *Invites* INPRO's Dialogue and Outreach Task to deepen efforts to make NEST available to all IAEA Member States, in order to allow them to assess the economics of different back-end fuel cycle strategies based on individual nuclear fuel cycle conditions;

38. *Endorses* the Reduction and Resources cycling of high-level radioactive waste through nuclear transmutation that aims to decrease the volume of high-level nuclear waste in disposal;

39. *Recommends* that Member States collaborate with the IAEA to establish plans for nuclear incidents which will:

a. Further ensure security regarding the transport of nuclear waste, decreasing the risk of serious contamination or incidents by:

    i. Taking into consideration the needs and necessity of the region in question, avoiding long-range transportation of hazardous waste and dangerous materials as most as possible;

    ii. Ensuring that these routes can be kept in good condition through a frequent reevaluation of the roads and infrastructure and regular security assessment by law enforcement agencies;

b. Make use of emerging technology such as AI in conjunction with existing technical infrastructure such as geospatial satellite imagery as tools to help plan these routes;

40. *Suggests* the initiation of multiple regionally-focused CRPs providing access to secure transport of spent nuclear materials by developing relationships between developed and developing countries that are working together to sustainably transport spent nuclear material;

41. *Recommends* raising the standards for international transportation of nuclear material/waste through the establishment of disaster action plans specifically addressing leakage or loss of nuclear material during transport via the IAEA-Member State collaboration modeling the Integrated Regulatory Review System (IRRS);

42. *Urges* that nuclear material or nuclear waste located in, or being transported through conflict zones, areas at risk of imminent invasion, and areas at risk of a disruption in transport, implement increased security protocols to decrease the risk of radiation leaks and theft of materials for the creation of nuclear/radiological weapons;

43. *Encourages* Member States to utilize IAEA Passive Seals project which is utilized to lock and protect storage and transport contain doors, locks, and facility material;

44. *Encourages* the drafting of guidelines for the use of Radio-Frequency Identification (RFID) tracking systems under the mandate of the IAEA, in which active RFID tags communicate with sensors to provide encrypted information on nuclear waste conditions, in order to:

    a. Track nuclear materials in transport and allow transporters of nuclear waste to access live information about the security of their payloads in real time, using current radio communication infrastructure, at the discretion of the Member State;

    b. Assess and support the security of nuclear waste in transport to prevent inappropriate dumping of nuclear waste on land and overseas;

45. *Supports* Member States partnering with the IAEA's *Next Generation Surveillance Systems* which utilizes gamma-radiation spectrometers and sophisticated 3D camera systems inside nuclear waste material transportation containers to ensure the protection of nuclear waste from leakage or theft;

46. *Requests* that radioactive waste management (RWM), in accordance with the Nuclear Waste Management Section of the IAEA, should be clearly defined by Member States, and licensing categories should be broadened to include more types of nuclear waste such as naturally occurring radioactive materials to allow finer distinguishment between different kinds of nuclear waste;

47. *Encourages* member states to implement recommendations laid out by the IAEA Nuclear Energy Series *Experience in the Management of Radioactive Waste After Nuclear Accidents: A Basis for Pre-Planning* by:

    a. Creating regional protocols that can address nuclear disasters and clean up;

    b. Using information-sharing programs to optimize recovery after nuclear disasters;

    c. Researching methods to prevent leakage of nuclear waste into the water with emphasis on water sources that supply communities;

    d. Analyzing the success of recommendations;

48. *Endorses* the expanded use of the IAEA's Cold Crucible Induction Melting Project which utilizes steel crucible heating and cooling of liquid nuclear waste into solid glass material for safer near-surface disposal preventing liquid nuclear waste leakage into waterways or population centers;

49. *Requests* that the Technological Cooperation Programme (TCP) shall be recommended for establishing a committee that researches and allocates financial compensation to countries that are negatively impacted by nuclear waste by:

    a. Receiving voluntary, and optional funding from member states that originally caused the nuclear mismanagement;

    b. Holding interregional meetings about the establishment of said committee and its international interactions;

50. *Promotes* responsible nuclear waste management practices and considering future nuclear energy sources according to IAEA standards to prevent irradiation of ocean waters, especially with regards to tritium and cesium levels, through preventing:

    a. Nuclear waste management facilities from being located within close proximity to oceans on account of increasing climate change-related natural disasters;

    b. Widespread risk of disposal of radioactive materials and spillage;

51. *Encourages* the development of a public-private partnership and scholarship that increases the skills and technical abilities of emerging countries throughout the world to improve nuclear management practices and infrastructure with a particular focus on supporting citizens in the global south;

52. *Promotes* the utilization and expansion of Geographic Information Systems (GIS) technology to optimize locations for nuclear waste management;

53. *Requests* the IAEA's International Network of Front-Line Officers and Organizations for Nuclear Security Detection to connect security agencies and public officials through web forums and regional conferences to promote cooperation on establishing safeguards mechanisms by providing technical assistance and public education;

54. *Urges* Member States, in accordance with SDGs 14 and 15, to assist with the development and improvement of nuclear waste depositories in order to combat the environmental impacts of nuclear waste by:

    a. Adopting modern nuclear waste disposal technologies such as deep geological nuclear waste depositories;

b. Encouraging funding between developed Member States and developing Member States to sustainably existing funding programs, such as the Peaceful Uses Initiative (PUI);

c. Making use of the Regulatory Infrastructure Development Project (RIDP) to help establish a framework to incorporate nuclear energy through;

55. *Encourages* research regarding pyro processing, closed cycle nuclear recycling, and other efficient nuclear waste processing systems.

Code: IAEA/1/7
Committee: International Atomic Energy Agency
Topic: Nuclear Waste Management

The International Atomic Energy Agency,

Reinforcing the *2030 Agenda for Sustainable Development* (A/RES/70/1) of 2015 in the context of nuclear waste, with special regard to the 17 Sustainable Development Goals (SDGs) that focus on equality and protecting the planet,

Guided by SDG target 3.D to strengthen the capacity of all Member States, in particular developing Member States, for early warning, risk education, and management of national and global health risk, SDG target 13.1 to strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all Member States, and target 15.1 to ensure the conservation, restoration, and sustainable use of territorial and inland freshwater ecosystems and their services,

Bearing in mind the International Atomic Energy Agency (IAEA) General Conference adoption of the 66/6 resolution in 2022 on “Nuclear and Radiation Safety” which encourages Member States to develop and implement programs or approaches for the safe management of radioactive waste and spent fuel,

Recognizing the inclusivity and individualized solutions already proposed through the Technical Cooperation Program, an IAEA framework focused on aiding Member States in modifying their legislature in regard to development in the nuclear sector,

Acknowledging the precedent in proper nuclear waste management set forth by the *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* (INFCIRC/546),

Emphasizing the importance of the Peaceful Usage Initiative (PUI), which has provided financial assistance for 150 Member States to safely manage nuclear waste,

Realizing the importance of the guidelines set forth by the IAEA Safety Standards Series No. SSG-14 on geological disposal facilities for radioactive waste at all levels of threat including high-, intermediate-, and low-level waste,

Mindful of the *Convention on Early Notification of a Nuclear Accident* as a first step in acknowledging the usefulness of bilateral and multilateral agreements on information exchange,

Emphasizing the importance of the Peaceful Usage Initiative, which has provided financial assistance for 150 Member States to safely manage nuclear waste,

Calling attention to the sovereignty of all Member States and the need for baseline knowledge sharing and safety standards,

Having adopted the *London Convention* (1972) to halt radioactive pollution from entering waterways, including but not limited to groundwater,

Bearing in mind the International Conference on the Safety of Radioactive Waste Management, Decommissioning, Environmental Protection and Remediation: Ensuring Safety and Enabling Sustainability happening on November 6th to 10th, 2023,

Bringing attention to the success of the *Strategic Action Plan for the Implementation of European Regional Repository II* (SAPIERR II),

Reiterating the success of the European Repository Development Organization Working Group (ERDO-WG),

Understanding that preventing and reducing the creation of waste in energy production is the most sustainable practice for the international community regarding nuclear power,

Reaffirming the *IAEA Nuclear Energy Series Technical Report No. NW-T-1.25 on Costing Methods and Funding Schemes for Radioactive Waste Disposal Programmes*,

1. *Encouraging* Member States to consider developing and implementing a framework called the Climate Objectives for Universal Resilience, Adaption, and Granting Equity (COURAGE), which encourages equal opportunity for all Member States and enable participants to foster safe nuclear waste management through:

    a. Establishing new Opening Regional Initiatives (ORI) that mimic the Open Balkans Initiative, allowing Member States to participate in open and voluntary trade of nuclear waste;

    b. Installing vocational training programs to improve safeguards of nuclear waste facilities and educational opportunities for interested parties, especially young people, to encourage participation within the field, developing adaptable, regionally focused solutions targeting the issue of nuclear waste management;

    c. Acknowledging the environmental impacts and the effects on human health from ineffective nuclear waste management;

2. *Suggests* that Member States implement the COURAGE framework as they see fit in order to encourage regional equitability of responsibilities, minimize risk factors that are involved with nuclear waste management, and create adaptable solutions for foreseeable issues;

3. *Expresses its hope* for multilateral efforts, such as an Open Regions Initiative, to negotiate the exchange of nuclear waste between Member States in regard to:

    a. Unwarranted dumping, importation, and transportation of hazardous material;

    b. Holding Member States accountable for the burden of the storage and disposal of nuclear waste and hazardous material in a shared and collaborative manner;

4. *Recommends* the creation of a Climate-Resilient Adaptive Peacebuilding (CAP) initiative to:

    a. Promote sustainable economic models that recognize state sovereignty and Member States' individual decisions for the trade of goods and waste;

    b. Protect vulnerable populations from the potential dangers of unsafe nuclear waste transportation by creating a set of guidelines under COURAGE that reinforce safe transportation practices;

    c. Preserve the infrastructure of regions that are impacted by climate change by ensuring safe nuclear waste storage in order to prevent additional soil erosion;

5. *Encourages* Member States to collaborate with the IAEA to improve the Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS) in order to improve its efficiency and utility by:

a. Creating communication channels between the IAEA experts in charge of ARTEMIS as well as experts on the nuclear field from Member States, such as direct communication lines, online meetings, and other internet means so that they can give their feedback as per why they are not able to implement ARTEMIS suggestions and further discuss better ways to do so;

b. Inviting experts and academics in nuclear energy, as well as computer and technological fields, to facilitate discussion and propose options to analyze the result of the discussions between the IAEA and Member States;

c. Encouraging Member States to make these studies public, if they see it fit, to promote transparency among Member States and industries;

6. *Remembers* Member States that all decommissioning are subjected to the inspection of IAEA's inspectors, or other environmental United Nations body if recommended by the IAEA's Board of Directors;

7. *Calls upon* the IAEA Board of Governors to compile a report on an annual basis, informed by inspectors from each Member State, titled the *Journal on Public Health and Nuclear Waste* with the purpose of:

    a. Monitoring progress within the concerns of nuclear waste management;

    b. Monitoring the correlation between the production of nuclear waste and its effects on human health and the environment to ensure best practices;

8. *Recommends* the expansion of the Technical Cooperation Program (TCP), a collaborative science and technology forum, by encouraging increased funding from Member States to aid other states while they develop sustainable and ecologically responsible nuclear programs, notably by helping them update their nuclear legislative frameworks in order to comply with IAEA Safety Standards;

9. *Encourages* the expansion of Article III of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, which currently speaks of the life cycle of nuclear facilities, including the creation, design, proper maintenance, and formal closing procedures of nuclear facilities, to address all levels of radioactive waste, notably by:

    a. Incorporating clauses echoing the guidelines proposed by *IAEA Safety Standards Series No. SSG-14* on safe geological disposal of waste for high, intermediate, and low-level waste to:

        i. Expound and delineate the differences in operating facilities that deal with each level of waste individually;

        ii. Provide stricter guidelines for those of high-level waste, and appropriate guidelines to be followed with intermediate and low-level waste;

    b. Encouraging further partnerships between Member States and the Radiation Safety Standards Committee and the Nuclear Safety Standards Committee within the IAEA to assist Member States in the implementation of these standards within their member states at their voluntary request;

10. *Recommends* that Member States model their handling of nuclear waste on successful programs such as SAPIERR II and ERDO-WG while implementing regional waste repositories in order to:

    a. Create regional-specific repositories under IAEA supervision, distributed so that every Member State has a repository within a reasonable distance;

    b. Ensure that Host States and the IAEA should guarantee that once other Member States commit to supporting and using the repository, they are not refused storage space for any other reasons other than improper transportation or violation of IAEA safety standards;

    c. Foster better practice sharing among Member States by building upon *IAEA Specific Safety Guide for Geological Disposal Facilities for Radioactive Waste (No. SSG-14)*;

    d. Determine a rate based on the level of radioactivity of the nuclear waste stored by a particular MS as a contribution towards reimbursement for any inconveniences the MS hosting the repository may experience;

11. *Urges* Member States to establish regional research centers that focus on the construction of geological repositories and efficient reactors for recycling strong nuclear waste, as well as building them with specific safety standards as determined by the Board of Governors, the IAEA Governmental, Regulatory and Legal Framework, and the *Safety Guide on the Geological Disposal Facilities for Radioactive Waste*, and establishing them under consideration of:

    a. Member States or regions that are subject to political volatility, warfare, and/or terrorist activity;

    b. Legal antecedents or previous agreements on that topic;

12. *Calls for* the host Member State of such geological repositories to consider the benefits of recycling the nuclear waste they receive through regional Member States, and therefore the uses of the efficient reactors maximum generation of electricity for the host Member States;

13. *Suggests* that Member States and regional organizations interested in regional waste repositories (RWRs) consider the viability of funding from sources such as, but not limited to:

    a. Income gained from charging states who opt into RWR and disposals that are derived from existing national funding schemes for nuclear waste management already, such as:

        i. Funds from waste producers who are required to pay a fee for waste management and decommissioning;

        ii. Funds from waste producers who make quarterly contributions to waste agencies based on the volume of waste produced;

        iii. Funds from operators who are charged a rate for megawatt-per-hours produced;

        iv. And where no current funding scheme exists, to model the examples listed above and other Member States' models mentioned in the IAEA *Nuclear Energy Series Technical Report No. NW-T-1.25;*

b. The IAEA Regular Budget;

c. IAEA technical cooperation projects similar to Project CPR9054, which strengthens national infrastructure and technical capabilities for a geological disposal facility and the construction of an underground research laboratory;

d. A percentage or flat fee for private investors who bid for nuclear power plant projects;

e. And funding from regional organizations;

14. *Encourages* the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) and the Global Forum for Nuclear Innovation Network (GFNI) to foster scientific programs regarding nuclear waste and nuclear sustainability to promote knowledge sharing by:

    a. Organizing fellowships and panels between field experts from interested Member States to share their scientific knowledge and expertise specifically on waste management and the construction of an efficient reactor for recycling;

    b. Planning scientific exchange programs that can give interested Member States' nuclear experts an opportunity to experiment with the work done elsewhere in the world;

15. *Further recommends* the use of technologies that reduce the consequences of nuclear waste, including, but not limited to:

    a. Member States that wish to expand their nuclear programs through reprocessing technologies that turn nuclear waste into new fuel or products, established and upheld according to the standards of research and safety, implemented and outlined by IAEA frameworks and SRAs who oversee it, while respecting the criteria elaborated under clause 10;

    b. Containment technologies within the sectors of transportation and handling of waste;

    c. Technologies that respect the IAEA security protocols in particularly protecting transports;

16. *Recommends* the use of trucks carrying dual-purpose dry cask storage to ship radioactive nuclear waste to reactor facilities for the purpose of storage or reprocessing to create usable energy by:

    a. Creating infrastructure for highly radioactive materials that include proper transportation routes, as well as special packaging and labels that ensure the safety of the material;

    b. Having dedicated training programs for drivers that include basic radiation science as well as emergency safety;

    c. Making sure that the casks undergo multiple extreme tests conducted by exporting Member States to test the sturdiness and safety of these casks;

17. *Stresses for* Member States to ensure that any radioactive waste produced throughout activities undertaken within the borders of another be handled safely and properly by said Member States when ending their activities;

18. *Calls upon* Member States to prevent the creation of nuclear waste by further developing infrastructure that emphasizes the most efficient use of nuclear materials and by investing in renewable energy sources, including but not limited to hydroelectric, solar, and wind energy;

19. *Calls on* all Member States to convene at the *Informative Panel for Geological Repositories* which would:

    a. Request a voluntary delegation from each Member State to attend the panel;

    b. Provide Member States a platform to discuss their progress in regional nuclear waste repositories centers;

    c. Meet biannually;

    d. Allow Member States to share information regarding the most up-to-date regulations and safeguards, including:

        i. The updating of the IAEA Safety Handbook on the Geological Disposal Facilities for Radioactive Waste;

        ii. The creation of an updated step-by-step technical guidebook on the construction of geological repositories;

20. *Further recommends* the implementation of a set of agreed-upon regulations that observe and demotivate both public and private actors from withdrawing from conventions and treaties that promote good practice of nuclear management and nuclear waste recycling;

21. *Encourages* the Nuclear Safety Standards Committee and Radiation Safety committees within the IAEA to further assist Member States in fully abiding by Article III of the *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* and Article 3 of the *Statute of the International Atomic Energy Agency* (997) and the guidelines outlined by the IAEA Safety Standards Series No. SSG-14 on *Geological Disposal Facilities for Radioactive Waste* in order to dispose of high, intermediate, and low-level waste appropriately.

Code: IAEA/1/8
Committee: International Atomic Energy Agency
Topic: Nuclear Waste Management

The International Atomic Energy Agency,

Recognizing the necessity of international cooperation regarding the question of high-level nuclear waste (HLW) in line with the *Treaty on the Non-Proliferation of Nuclear Weapons* (NPT) (1968) and thus,

Reaffirming Article II of its statute stating that “the Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health, and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose”,

Recalling the *2030 Agenda for Sustainable Development* of the United Nations and the 17 Sustainable Development Goals that balance the three dimensions of sustainable development - economic, social, and environmental-, especially SDG 4 on quality of education and SDG 7 on affordable and clean energy, including, but not limited to, nuclear energy,

Ensuring the safety of future generations when it comes to nuclear waste according to SDG 15 and Article 11 from the IAEA resolution INFCIRC/546 (1997) on “Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management” which clearly stipulates the “aim to avoid imposing undue burdens on future generations”,

Keeping in mind the already existing waste management initiatives implemented by the IAEA such as the Comprehensive Capacity building initiative for SSACs and SRAs (COMPASS), the Integrated Nuclear Security Support Plans (INSSP), and the Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS) which are important landmarks in the establishment of fundamental safety principles on radioactive waste globally,

Acknowledging the importance of courses such as the Train-the-trainers Courses for Radiation Protection Officers (RPOs) or the School of Nuclear Knowledge Management in order to help Member States create a pool of trainers and young professionals with technical competence, practical experience, and teaching skills needed to establish a sustainable national training program for radiation protection officers and increasing knowledge on different dimensions of nuclear management,

Recognizing the impact the Global Nuclear Safety and Security Network (GNSSN) had on increasing collaboration and communication between Member States, organizations, and relevant experts as well as its importance for capacity-building in Member States that are planning or beginning their nuclear programs,

Acknowledging the impact that the IAEA's Peaceful Uses Initiative (PUI) has had on supporting and mobilizing IAEA initiatives in Member States, such as coordinating extrabudgetary contributions and peaceful applications of nuclear infrastructure and technology,

Recognizing existing regional commissions like the African Commission on Nuclear Energy (AFCONE), the European Atomic Energy Community (EURATOM), and the Asian Network for Education in Nuclear Technology (ANENT) and their continuous efforts put towards the promotion of nuclear peace and security such as the recent recommendations in the 2022 Wilton Park Conference,

Recognizing further the Waste Safety Standard Committee (WASCC) and the Waste Directive 2011/70/EURATOM that create a community framework for the safe management of radioactive waste and aim to guarantee more security, avoid undue burdens on the future generations and enhance transparency,

Noting with concern nuclear waste must be contained and isolated in order to avoid harmful global environment outcomes and population's health as stated in the *Status and Trends in Spent Fuel and Radioactive Management* (2022*)*,

Reaffirming the necessity to respect the 2001 *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* according to the IAEA (December 1997),

Underlining the importance of accessibility and inclusivity in the context of an international community where only 20% of citizens speak fluent English,

Noting the difference in treatment methods between adults and children, specifically in exposure to ionizing radiation, and the alarming lack of adherence to proper guidelines, resulting in negative effects on patients,

Noticing the risk that some Member States may unjustly send nuclear waste to other Member States without proper infrastructural procedures in place, exacerbating threats to public health, environmental safety, and future generations and increasing the risk of nuclear accidents,

Recognizing the Specific Safety Requirement *No. SSR-5* established by the IAEA to ensure the safe disposal of nuclear waste,

Affirming that the development of such infrastructures can only be done in a place of low seismic risk to ensure the safety of the installations but also the safety of humanity,

Concerned by the past management of nuclear waste after the Chernobyl and Fukushima accidents which have led to the release of highly radioactive products into the environment, including the sea, soil, and air,

Noting that Members States should ensure that producers of nuclear waste fulfill the obligations relating to the transport of the waste to the geological disposal site in a way that is compatible with the protection of the environment,

Fully recognizing that*,* according to the *Basel Convention* (1992), every Member State has the sovereign right to prohibit the entry or the storage of nuclear waste from foreign sources on its territory,

Alarmed about the safety and security of nuclear facilities and materials as well as the acquisition of sensitive material for non-peaceful purposes from other Member States and Non-State Actors (NSA) as violations of Security Council resolution 1540 (2004), particularly through disruptive attacks and criminal activities,

Optimistic about the potential for emerging technologies, including artificial intelligence (AI) and satellite imaging, to detect and deter the misuse of nuclear waste,

Recalling the unanimously approved A/RES/1, which declared the international community's strong support for nuclear energy, as the first resolution ever adopted by the United Nations General Assembly which outlined an international framework for the peaceful proliferation of nuclear technology,

Aware that deep geological repositories (DGRs) and other relevant infrastructures should be constructed in a manner that maintains their permanent isolation until the HLW within them becomes safe,

Acknowledging the IAEA's Technical Cooperation Fund (TCF) which is funded by Member States' annual contributions,

Observing the lack of proper solutions for the long-term disposal of HLW and the importance of minimizing radiological waste, particularly HLW, through the use of the latest technologies aligned with the open-cycle strategy,

Recalling General Assembly resolution 49/60 (1995) on “measures to eliminate international terrorism”, that describes a terrorist act as a “criminal act intended or calculated to provoke a state of terror in the general public, a group of persons or particular persons for political purposes are in any circumstance unjustifiable, whatever the considerations of a political, philosophical, ideological, racial, ethnic, religious or any other nature that may be invoked to justify them”,

1. *Encourages* Member States to continue advancing sustained multilateral cooperation at the regional level to align national standards on nuclear waste management and facilitate effective policy coordination towards an open cycle strategy that prevents nuclear proliferation;

2. *Calls* for the identification of non-seismic potential disposal sites for nuclear waste by scientific experts by developing clear and internationally recognized criteria that consider population centers, geological formations, and other geographic features to prevent harm to human health and the environment;

3. *Encourages* the appropriate compensation of Member States that voluntarily host new regional DGR facilities to promote cooperation and fair distribution of responsibilities financed by the Member States of the respective nuclear waste management program;

4. *Requests* the IAEA to support multilateral Member States' cooperation for the safe transportation of nuclear waste between national regulatory organizations by:

    a. Enhancing transportation personnel training;

    b. Encouraging experienced Member State governments to share security expertise with developing countries for enhanced handling of nuclear waste materials;

    c. Recommending regional cooperation for the provision of personnel training for border control and transport staff in UN official languages as well as additional languages that are determined by the Member States of the multilateral agreements to ensure efficient, accessible, and inclusive communication;

    d. Creating multinational rapid response teams led by an IAEA subcommittee called the International Nuclear Emergency Response Team (INERT) to mitigate or prevent the leakage or loss of radioactive materials in case of logistical or non-hostile complications while transporting nuclear materials and waste, with each disposal station housing an INERT rapid response team consisting of radioactive material containment experts, with the collection of experts and containment teams hereby called the International Nuclear Emergency Response Team (INERT);

    e. Calling for the standardization and regulation of radioactive material transport vehicles for easier and safer transportation of radioactive materials and more efficient usage across national borders, with the IAEA in charge of setting regulations for said nuclear transport;

5. *Encourages* Member States to follow the guidelines defined within IAEA’s Arrangements for Preparedness for a Nuclear or Radiological Emergency by defining a 20 kilometers area around nuclear power plants and all deep geological repositories in order to:

    a. Define an evacuation plan for people living in those areas in case of an accident;

    b. Reinforce prevention for people living in those areas;

c. Distributing good practice guides to people living within a 50-kilometer zone around a power plant;

6. *Proclaims* to establish a platform called the Platform for Improving Nuclear Transparency (PINT) that includes a tracking system for nuclear material transactions as well as an information sharing system to detect orphan sources in accordance with every Member States' sovereignty :

    a. To assign the administration of PINT to the IAEA;

    b. To appoint the foundation to the International Project on Innovative Nuclear Reactions and Fuel Cycles (INPRO);

    c. To encourage assisting experts from INPRO with the aim of passing on knowledge about orphan sources in international discussions via multiplier training;

    d. To address citizens, Non-Governmental Organizations (NGOs), and companies including hospitals and laboratories;

    e. To build up trust in supply chains by tracking nuclear material transactions in real-time;

    f. To improve the transparency of nuclear material transactions by using blockchain technology to prevent changes in data afterward;

    g. By prioritizing the setting of this system to nuclear material which transits to high-risk zones, such as the arc of crisis (Sahel desert);

7. *Further requests* to amplify the use of reconnaissance technology for observing nuclear waste transportation by:

    a. Calling for the establishment of international standards for the use of reconnaissance technology in order to ensure consistency and harmonization of practices across different Member States by:

        i. Implementing the joint standards in Member States' national security strategies;

        ii. Establishing and maintaining comprehensive and up-to-date records of all nuclear waste transportation activities;

    b. Encouraging to establish a robust and secure information-sharing mechanism to facilitate the timely exchange of information on nuclear waste transportation;

    c. Urging to provide further financial and technical resources to improve nuclear waste monitoring systems in high-risk zones;

8. *Fully supports* the reinforcement of the legal framework (*Convention of Safety of Radioactive Waste Management*) about the release of radioactivity waste into the environment to:

    a. Reiterate the prohibition of radioactive waste into rivers and streams in accordance with the *London Protocol* (1982) and calls for reinforcement of control for illegal emissions:

b. Calls for an enlarged control of potential aerial nuclear emissions by taking into account the recommendations of the International Commission on Radiological Protection;

9. *Calls upon* the Board of Governors to:

    a. Establish the Deep Geological Repository Exploratory Commission (DGREC), in line with the procedures outlined in article VI(i) of the Statute of the IAEA, with the mandate of aiding state and regional agencies (SRAs) in their coordinated and voluntary efforts to establish DGRs in optimal locations for shared Member State use and take note of the critical importance of ensuring that no entity opens a particular DGR once it has been sealed;

    b. Appoint the Director-General as Chair of the DGREC and task them with reporting to the Board of Governors regarding the ongoing operations of the commission;

    c. Appoint members to the DGREC in consultation with Member States and the Director-General, with particular emphasis being placed on appointing those with technical expertise in geology, nuclear physics, engineering, environmental science, and plate tectonics;

10. *Further Calls upon* the Board of Governors to:

    a. Establish the Anti-Terrorism Operations & Multilateral Investigations Committee (ATOMIC), in line with the procedures outlined in article VI(i) of the Statute of the IAEA, with the mandate of coordinating between domestic law enforcement agencies and SRAs regarding threats to nuclear facilities, theft and usage of illicit fissile material for martial purposes, and global nuclear security more broadly;

    b. Appoint the Director-General as Chair of ATOMIC and task them with reporting to the Board of Governors regarding the ongoing operations of the commission and reporting to the Security Council regarding matters of global security relevant to the commission;

    c. Appoint members to ATOMIC in consultation with Member States and the Director-General, with no more than two (2) commission members being citizens of a particular Member State and with particular emphasis on appointing those with expertise in law enforcement, international affairs, global security, and intelligence;

11. *Recommends* that all Member States consider developing nuclear energy research and production facilities consider:

    a. Promoting implementation of kärnbränslesäkerhet (KBS-3), the latest technological notion of constructing DGR covering the nuclear material with a double capsule and burying it in the deep and stable ground, nuclear fuel safety as the latest technology for DGRs;

    b. Urging the use of transmutation technologies, as defined by section 4.22 of the *IAEA Safeguards Glossary* of 2001;

12. *Tasks* the Director-General with tabling a comprehensive report to the General Conference before 2028 on a recommended course of action regarding the eternal isolation of sealed DGRs until geological redundancy;

13. *Encourages* all Member States to increase their yearly contributions to the TCF in order to increase the funds allocated towards knowledge provision regarding the construction of DGRs and borehole facilities;

14. *Encourages* all Member States to adjust funding to the Agency's existing financial contribution framework in an equitable and proportional manner in order to adequately fund operating costs for the Agency to manage escalating budgetary pressures by:

    a. Considering the relative development of Member States' nuclear energy programs;

    b. Considering the relative production of nuclear waste and the classification of said nuclear waste by Member States;

    c. Considering the relative economic development and gross national product of Member States;

    d. Strongly encouraging Member States to increase their extra-budgetary contributions to the Agency to advance its substantive initiatives;

15. *Aims* to ensure that Member States that carry nuclear energy have the adequate infrastructure to manage their nuclear waste by supporting the creation of a fiscal adjustment system and encouraging collaboration between SRAs so that Member States will be properly compensated for the risk taken by transporting and hosting radioactive waste;

16. *Calls* for expanded discussion by the General Committee on the subject of regional commissions focused on nuclear issues and technological cooperation among Member States, inspired by organizations such as AFCONE or EURATOM aiming to accomplish the following:

    a. The Establishment of Regional Commissions where:

        i. Regional Commissions are defined as a body in which Member States of a region or continent are able to gather to discuss and coordinate the development, research, and creation of nuclear facilities and technologies;

        ii. Regional Commissions are suggested to be grounded within Nuclear Weapon Free-Zones (NWFZ) treaties, giving Member States a starting point specific to their respective regional treaties;

        iii. Offering a place for regional and international technical experts to congregate and combine technical knowledge with regional expertise by mobilizing translation units on nuclear management;

        iv. Regional Commissions would work hand in hand with IAEA, putting forward and using regulations to and from the IAEA;

    b. The Improvement of existing commissions through:

        i. Increasing the financial support for expert training programs by the international community through support programs like the "Nuclear Saves" partnerships by the PUI;

ii. Expanding public outreach and regional nuclear education, with citizens able to ask questions in an online forum held by said commissions regarding ongoing legislation and activities, to be answered by qualified professionals such as technical experts;

iii. Tight cooperation with the IAEA that centralizes the discussion of technology and research, and allows recommendations and expertise to be communicated to other regional commissions;

17. *Recommends* that there is open sharing of information to developing Member States, and that they are included in the education and training processes to ensure proper education and increased accessibility to jobs in the nuclear technology field through PINT;

18. *Urges* Member States to share funding and technologies to build the capacity of Member States with small nuclear programs by facilitating scientific exchanges and open communication of discoveries to promote progress and cooperation in safely managing nuclear waste by:

    a. Connecting post-secondary education institutions in developing Member States with specialized regional IAEA Coordinated Research Projects (CPRs) in order to fill developmental gaps between Member States and shared initiatives;

    b. Invites Member States with expertise in nuclear waste management (NWM) and repurposing and nuclear energy to provide training to students in Science, Technology, Engineering, and Math (STEM) fields in developing Member States to promote local expertise on nuclear issues;

19. *Further recommends* Member States cooperate on a common framework to ensure global legislative harmonization by:

    a. Encouraging Member States to pursue potential reforms for the following initiatives already adopted by the IAEA to ensure that equity and inclusivity are respected between all Member States including:

        i. COMPASS supports national authorities for safeguards implementation;

        ii. Integrated Nuclear Security Support Plans (INSSPs);

        iii. Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation (ARTEMIS);

    b. Further encourages Member States to allow *Integrated Regulatory Review Service* (IRRS) missions in their territory to improve their development on nuclear waste safety;

20. *Urges* all Member States, to rely on the IAEA's support plans in order to improve their nuclear safety regimes and therefore their waste management practices by:

    a. Joining the assistance programs offered by the IAEA for national and regional training courses and seminar programs like COMPASS, INSSPs, and ARTEMIS that provide a systematic and comprehensive framework for Member States to review their nuclear regime and identify their vulnerabilities;

b. Encouraging all Member States to continuously update national rules and guidelines in accordance with the latest IAEA recommendations and its Global Nuclear Safety Regime (2006);

21. *Calls upon* interested Member States to request an Education and Training Appraisal (EduTa) mission to determine whether the IAEA and the Member State can sign an agreement to inaugurate new centers that would provide education and training events such as the Postgraduate Educational Course in Radiation Protection and the Safety of Radiation Sources, would encourage the appliance of IAEA safety measures and the development of training material, and furnish education to Member States regarding the inauguration and the management of a National Strategy for Education and Training in Radiation, Transport and Waste Safety in order to facilitate scientific exchanges and open communication of discoveries;

22. *Strongly recommends* Member States expand scholarly access to the IAEA's Nuclear Knowledge Management School (NKMS) by:

    a. Encouraging expansion of the program to prominent technical schools and well-known university STEM programs on an annual basis;

    b. Providing appropriate technical resources for NKMS experts to optimally engage with young professionals;

    c. Supporting tailored academic grants to local educational institutions in order to promote and facilitate equitable access;

23. *Calls for* new standardized guidelines for nuclear-related health conditions, building on the International Action Plan for Radiological Protection of Patients:

    a. Standardizing and expanding the treatment of radiation-affected children, noting the difference in treatment needed between adults and children;

    b. Creation of specific centers focused on the training of expertise that is specialized in Radiology;

24. *Calls upon* Member States to collaborate on a Coordinated Research Project (CRP) that would explore the utilization of Unmanned Autonomous Vehicles for the identification of suitable nuclear location hubs, that would:

    a. Explore the utilization of machine learning models to predict the feasibility of candidate disposal sites;

    b. Produce a Technical Report outlining sitting guidance for Member States.

Code: IAEA/1/9
Committee: International Atomic Energy Agency
Topic: Nuclear Waste Management

The International Atomic Energy Agency,

Recognizing that radioactive waste is produced by various uses of nuclear technology as well as by the operation of nuclear reactors, which produces spent fuel and radioactive waste,

Calling attention to the lack of accessibility of nuclear technology in Member States,

Appreciating the International Framework for Nuclear Energy Cooperation (IFNEC) for its continued development of new nuclear energy initiatives via the Infrastructure Development Working Group and the Nuclear Fuel Services Working Group,

Conscious of the financial hurdles for Member States who struggle with the implementation of disposal methods,

Acknowledging the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management and its work establishing fundamental safety principles and creation of a peer review process,

Noting interest in international research and development through the International Framework for Nuclear Energy Cooperation (IFNEC) for the express purpose of providing better opportunities for Member States,

Underlining the extensive policy research performed by the IAEA in attempts to help developing nations,

Recognizing the need for economic incentives in order to encourage efficient nuclear waste disposal methods,

Reiterating that the state has the ultimate duty for guaranteeing the safety of spent fuel and radioactive waste management,

Applauding the Research Contracts Administration Section within the IAEA's Department of Nuclear Sciences and Applications (RCAS) for administering the coordinated research projects (CRPs) which contribute to the enhancement of the collective knowledge of nuclear technology,

1. *Encourages* the International Framework for Nuclear Energy Cooperation (IFNEC) to become an entity under the IAEA to create a global network of nuclear fuel cycle facilities under IAEA supervision that will:

    a. Ensure Member States comply with the agenda of setting high standards for nuclear fuel safety and security and administer international safeguards in order to strengthen the global nuclear safety and security framework under the guidance of the Agency;

    b. Work towards developing technology that focuses on making advanced nuclear fuel cycles, promoting new reprocessing mechanisms, and encouraging the expansion of safe and strengthened nuclear power in an efficient and sound manner;

2. *Permitting* the existent two bodies that make up the IFNEC to expand into the IAEA granting global access as a branch of the IAEA which;

3. *Ensuring* the IFNECs body, Infrastructure Development Working Group, possesses the ability to:

a. Assess comprehensive nuclear fuel supply goals, including the leasing of nuclear fuel and other related considerations, and the evaluation process also encompasses an analysis of back-end fuel cycle options;

b. Helps identify areas for improvement in existing policies and practices and can aid countries to identify potential risks and opportunities associated with nuclear fuel management, which can inform future decisions related to nuclear energy ensuring;

c. Facilitation international cooperation and collaboration, promote nuclear safety and security, and contribute to the sustainable development of nuclear energy;

4. *Ensuring* the IFNECs body, the Reliable Nuclear Fuel Services Working Group, possesses the ability to:

    a. Address initiatives aimed at establishing an international nuclear fuel services framework that facilitates nuclear power deployment in multiple countries, ranging in topics including human resource development, radioactive waste management, financing options, and engagement with specialist organizations;

    b. Identify infrastructure requirements for the deployment of small modular reactors;

5. *Recommends* funding through NGOs and additional voluntary funding from Member States to research how to better dispose of spent nuclear fuel, while adding an opt-in position for all states utilizing the Nuclear Fuel Services Working Group:

    a. Establishes partnerships between countries with voluntary opt-in positions allowing them to gain funding towards projects for the development of nuclear disposal sites, as well as the creation of a global fund, based on Member States' support and funds from the WB, for nuclear waste management that can be accessed by countries in need of financial support;

    b. Promotes innovative financing mechanisms for nuclear waste disposal, such as green bonds or impact investment funds, which will attract private sector investment and help mobilize additional resources for the development of nuclear waste disposal infrastructure;

6. *Acknowledges* the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management as a persistent body that seeks to examine and report on the conditions of Waste Management with given steps towards improvement of conditions, such as:

    a. Ensuring the governing body of the Convention is filled with experts from around the world, representing a diverse range of technical, scientific, and policy expertise related to nuclear waste management;

    b. Allowing for National security concerns to be taken into account when addressing the oversight of nuclear facilities and allowing for countries that possess nuclear weapons to be excluded from certain oversight;

    c. Developing a comprehensive understanding of the conditions of waste management with emphasis on contamination and sustainability;

7. *Recommends* the IAEA expand to the examination of research and development about nuclear waste provision to provide detailed information into which countries funds should be

directed towards so that:

a. Members states who accept funding will create a proposal on how to use the funds to ensure effective use of the funds;

b. Collaboration among researchers and institutions from Member States, with a focus on sharing knowledge, expertise, and resources utilizing the ARTEMIS database so as to enable the development of innovative technologies that can be applied in different contexts and regions, and would help to promote international cooperation and collaboration in the field of nuclear energy;

8. *Expresses* the need for countries to adopt the IAEA's *Policies and Strategies for Radioactive Waste Management* by adding incentives for adopting these regulations ensuring that:

    a. Focus on funding for nuclear facilities and other projects aimed at promoting reusable energy;

    b. Funding will be at the discretion of the World Bank no concrete incentives shall be put in place, instead focusing on development-based incentives in line with the World Bank ideals;

9. *Expresses its support* for the expansion of economic incentives such as fixed rates on buyback of nuclear waste that gives financial rewards to countries or IAEA partner organizations (such as ROSATOM) that are thus fitted to properly fund and operate disposal sites, as well as transportation from necessary member states, as an important financial measure to mitigate costs for countries struggling with waste disposal;

10. *Establishes* the IAEA Committee for the Economic Enhancement of Disposal Technology (CEDT) under the auspices of the Research Contracts Administration Section within the Agency's Department of Nuclear Sciences and Applications (RCAS);

11. *Calls upon* the work of CEDT which shall:

    a. Consist of ten independent economists with extensive knowledge of nuclear energy policies and their implementation in market and non-market economies suggested by the Board of Directors and elected by the General Conference *en bloc for a tenure of five years each*;

    b. Assist national governments in adjusting their economic policies to maximize the economic viability of promising disposal technologies (such as borehole disposal technology) upon request;

    c. Ensure that suggestions can be easily implemented and are in line with national priorities and needs;

    d. Invite Member States to send a delegation of three national stakeholders to work with CEDT on their cases;

    e. Present an annual report on its activities to the GC, and best practices shall be gathered in openly accessible guidelines;

    f. Hold annual CEDT conventions in Melbourne, Australia, while meetings with national experts are to be primarily held online;

    g. Be funded by a two-fold model of PUI funding and contributions by the respective government profiting from consulting;

12. *Further requests* the Board of Directors to develop fee guidelines for the contributions by the respective governments profiting from consulting within CEDT;

13. *Encourages* Member States to be mindful of where nuclear waste is disposed of, in regard to Indigenous land ownership and protections and recommends that Member States seek out due diligence in assuring the nuclear waste sites that are created do not infringe on Indigenous lands.