

## Mid to Long-term Objectives Comparative Table of the Japan Atomic Energy Agency (Draft)

The underlined parts are the revised parts.

Mid to long-term objectives (Proposed revision)	Current mid to long-term objectives	Remarks (reason)
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<p>V. Matters Concerning the Improvement of the Efficiency of the Administration of the Business Operations</p> <p>1. Streamlining and efficiency of operations</p> <p>VI. Matters Concerning the Improvement of Financial Conditions</p> <p>VII. Other Important Matters Concerning the Administration of Operations</p> <p>1. Establish an effective and efficient management system</p> <p>2. Matters concerning facilities and equipment</p> <p>3. Matters concerning the faithful implementation of international agreements</p> <p>4. Matters concerning personnel</p> <p><u>※Items of IV 1. – 8. shown above: Based on “Guidelines on the formulation of goals of Incorporated Administrative Agencies (Decision by Minister for Internal Affairs and Communications, on September 2 2014)”, treat each item as “a certain business group and etc.”</u></p>	<p>V. Matters Concerning the Improvement of the Efficiency of the Administration of the Business Operations</p> <p>1. Streamlining and efficiency of operations</p> <p>VI. Matters Concerning the Improvement of Financial Conditions</p> <p>VII. Other Important Matters Concerning the Administration of Operations</p> <p>1. Establish an effective and efficient management system</p> <p>2. Matters concerning facilities and equipment</p> <p>3. Matters concerning the faithful implementation of international agreements</p> <p>4. Matters concerning personnel</p>	<p>Tsuruga district is newly set.</p> <p>“Group of businesses” is clearly written.</p>
<p>I. Position and Role of JAEA under Policy System</p> <p>The “Basic Energy Plan” (Cabinet decision in <u>July 2018; hereinafter referred to as the “Basic Energy Plan”</u>) is a plan for promoting measures on the demand and supply system of energy on a long-term, comprehensive and planned basis. Nuclear energy is recognized as an important baseload power source that contributes to the <u>long-term</u> stability of the energy demand and supply system from the viewpoints of energy output with respect to fuel input, good stable supply with efficiency and lower operation costs and greenhouse gas emissions by ensuring the safety and long-term</p>	<p>I. Position and Role of JAEA under Policy System</p> <p>In the “Basic Energy Plan” (Cabinet decision in <u>April 2014; hereinafter referred to as the “Basic Energy Plan”</u>), which is a basic plan, promoting measures on energy supply and demand on a long-term, comprehensive and planned basis, nuclear energy is recognized as an important baseload power source that contributes to the stability of the energy supply and demand system from the viewpoints of energy output volume against the fuel input amount, good stable supply and efficiency, operation costs and greenhouse gas emissions with ensuring safety as a major prerequisite and is</p>	<p>Date is changed.</p> <p>Expression is amended to be appropriate.</p> <p>Revision based on “Basic Energy Plan (Cabinet decision on July 2018)”.</p>

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<p>energy demand and supply. It is positioned as an important source of energy from the viewpoint of energy security of Japan with the scarcity of fossil fuels that causes it to depend on imports of most of its fuels from the foreign countries. At the same time, <u>the government and the nuclear power operators have never forgotten that tragic accident, we should seriously reflect on it and keep trying not to cause such accidents</u> as at TEPCO’s Fukushima Daiichi Nuclear Power Station (hereinafter referred to as the “accident at Fukushima Daiichi Nuclear Power Station”).</p> <p>Furthermore, nuclear power plays an important role not only in ensuring energy sources but also in contributing to the development of science and technology, academia and industry through the resolution of the issues on a global scale and the utilization of radiation etc. The national government plays an important role because a great deal of resources and time are required to solve the problems of R&amp;D, safety regulations and radioactive waste. Especially, decommissioning of reactors and contaminated water treatment caused by a serious nuclear accident like the one at Fukushima Daiichi Nuclear Power Station are globally unprecedented and difficult tasks and the national government should make every effort to work on them.</p> <p>The Agency specializes in issues to be addressed as a National Research and Development Agency, being the only comprehensive nuclear R&amp;D institute in Japan and contributes to nuclear energy and science and technology policies based on the policies of Japan as follows:</p> <p>In the Atomic Energy Basic Act (Act No. 186 of 1955), the fundamental nuclear policy of Japan, the Agency shall carry out activities such as basic research and applied research on nuclear energy, development of fast breeder reactors and necessary nuclear fuel materials for the purpose of establishing a nuclear fuel cycle,</p>	<p>one of the important sources of energy from the viewpoint of energy security for Japan with scarce fossil fuels, which must depend on imports from foreign countries for most of the fuel. At the same time, <u>we should continue to make efforts to prevent the recurrence of accidents</u> at TEPCO’s Fukushima Daiichi Nuclear Power Station (hereinafter referred to as the “accident at Fukushima Daiichi Nuclear Power Station”) and <u>prevent any other nuclear energy accident.</u></p> <p>Furthermore, nuclear power plays an important role not only in ensuring energy sources but also in contributing to the development of science and technology, academia and industry through the resolution of the issues on a global scale and the utilization of radiation etc. The national government plays an important role because a great deal of resources and time are required to solve the problems of R&amp;D, safety regulations and radioactive waste. Especially, decommissioning of reactors and contaminated water treatment caused by a serious nuclear accident like the one at Fukushima Daiichi Nuclear Power Station are globally unprecedented and difficult tasks and the national government should make every effort to work on them.</p> <p>The Agency specializes in issues to be addressed as a National Research and Development Agency, being the only comprehensive nuclear R&amp;D institute in Japan and contributes to nuclear energy and science and technology policies based on the policies of Japan as follows:</p> <p>In the Atomic Energy Basic Act (Act No. 186 of 1955), the fundamental nuclear policy of Japan, the Agency shall carry out activities such as basic research and applied research on nuclear energy, development of fast breeder reactors and necessary nuclear fuel materials for the purpose of establishing a nuclear fuel cycle,</p>	

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<p>the development of technology for reprocessing etc. of nuclear fuel materials, as well as the dissemination of the results of such research and development and is expected to support the technical infrastructure of nuclear power of Japan. In addition, processing of spent fuel that are generated with the use of nuclear power, developing the technology for decommissioning of the nuclear facilities <u>and activities to verify decommissioning of nuclear facilities in Tsuruga district</u> are also significant operations to be implemented by the Agency as the only comprehensive nuclear R&amp;D institute in Japan and as a nuclear power operator. Moreover, the Agency needs to work on dealing with the accident at Fukushima Daiichi Nuclear Power Station improving the safety of nuclear power, promoting the atomic energy's basic and generic research, developing human resources, implementing fast breeder reactor/<u>advanced reactor</u> R&amp;D and radioactive waste disposal related to the nuclear fuel cycle based on the energy policies of Japan's science and technology policies <u>and etc.</u> including nuclear energy such as the Energy Basic Plan and the "Fifth Science and Technology Basic Plan" (Cabinet decision in January 2016;<del>hereinafter referred to as the "Fifth Science and Technology Basic Plan"</del>), <u>"Basic concept for nuclear energy (Japan Atomic Energy Commission of July 20<sup>th</sup> 2017)"</u> and <u>"Concept of technology development/R&amp;D (Japan Atomic Energy Commission decision on June 12<sup>th</sup> 2018)"</u>. To carry out this R&amp;D, it is important for JAEA to contribute to maximize the results of R&amp;D of nuclear science and technology from all over Japan through active collaboration with universities and the industrial world as well as work on the maximization of its own R&amp;D achievements. Moreover, the Agency needs to play a critical role in the technical assistance necessary to properly enforce nuclear safety regulations based on "Safety Research in the Nuclear Regulatory Commission (NRA)"</p>	<p>the development of technology for reprocessing etc. of nuclear fuel materials, as well as the dissemination of the results of such research and development and is expected to support the technical infrastructure of nuclear power of Japan. In addition, processing of spent fuel that are generated with use of nuclear power and developing technology towards decommissioning of nuclear facilities are also significant operations to be implemented by the Agency, as the only comprehensive nuclear R&amp;D institute in Japan and as a nuclear power operator. Moreover, the Agency needs to work on dealing with the accident at Fukushima Daiichi Nuclear Power Station, improving the safety of nuclear power, promoting the atomic energy basic and generic research and developing human resources, implementing fast breeder reactor R&amp;D and radioactive waste disposal related to the nuclear fuel cycle, based on the energy policies of science and technology policies <u>and etc.</u> of Japan including nuclear energy such as the Energy Basic Plan and the "Fifth Science and Technology Basic Plan" (Cabinet decision in January 2016; <u>hereinafter referred to as the "Fifth Science and Technology Basic Plan"</u>). To carry out this R&amp;D, it is important for JAEA to contribute to maximize the results of R&amp;D of nuclear science and technology from all over Japan through active collaboration with universities and the industrial world as well as work on the maximization of its own R&amp;D achievements. Moreover, the Agency needs to play a critical role in the technical assistance necessary to properly enforce nuclear safety regulations based on "Safety Research in the Nuclear Regulatory Commission (NRA)" formulated by NRA.</p>	<p>Addition by new item.</p> <p>Amendment due to transferring of the advanced reactor from the basic and generic researches.</p> <p>Expression is amended to be appropriate.</p> <p>Amendment based on "Basic concept for nuclear energy (Japan Atomic Energy Commission on July 20th 2017)" and etc.</p>

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<p>formulated by NRA.</p> <p>Further, the Agency shall share technology and knowledge learned as an advanced country utilizing nuclear power especially through the experience of coping with the accident at Fukushima Daiichi Nuclear Power Station with the world and contribute to the safety and nuclear security sector including the improvement of safety and enhancement of disaster prevention functions.</p> <p>Moreover, based on the “Basic Direction of the Reform of Japan Atomic Energy Agency” (MEXT Headquarters for Reforming JAEA, August 2013, hereinafter referred to as the “basic direction of the reform,” which originated from a defect in maintenance and management of the “MONJU” fast-breeder reactor (hereinafter referred to as “MONJU”) and a radioactive materials leakage accident at the Japan Proton Accelerator Research Complex (J-PARC) and was drawn up to review the Agency’s organizational and operational systems thoroughly. The Agency puts the utmost priority to safety, performs operations while gaining society's confidence as well as places priority to initiatives in the fields above. As part of this and from the viewpoints of affinity and the potential of comprehensive R&amp;D in quantum science, the Agency decided to separate part of R&amp;D on nuclear fusion and the applied research of quantum beams from its operations and integrate them into the National Institute of Radiological Sciences (NIRS) (The new Quantum Science Research and Development Agency starts operations in April 2016.). The Agency strives to coordinate and cooperate closely with the new agency to ensure that the separated R&amp;D operation is not disrupted. In addition, actions with respect to new regulation standards are performed in a well-planned and proper manner to safely and stably operate owned facilities.</p> <p>Based on the above, the Agency formulates its new mid to long-term objectives.</p>	<p>Further, the Agency shall share technology and knowledge learned as an advanced country utilizing nuclear power especially through the experience of coping with the accident at Fukushima Daiichi Nuclear Power Station with the world and contribute to the safety and nuclear security sector including the improvement of safety and enhancement of disaster prevention functions.</p> <p>Moreover, based on the “Basic Direction of the Reform of Japan Atomic Energy Agency” (MEXT Headquarters for Reforming JAEA, August 2013), (hereinafter referred to as the “basic direction of the reform”), which originated from a defect in maintenance and management of the “MONJU” fast-breeder reactor (hereinafter referred to as “MONJU”) and a radioactive materials leakage accident at the Japan Proton Accelerator Research Complex (J-PARC) and was drawn up to review the Agency’s organizational and operational systems thoroughly. The Agency puts the utmost priority to safety, performs operations while gaining society's confidence as well as places priority to initiatives in the fields above. As part of this and from the viewpoints of affinity and the potential of comprehensive R&amp;D in quantum science, the Agency decided to separate part of R&amp;D on nuclear fusion and the applied research of quantum beams from its operations and integrate them into the National Institute of Radiological Sciences (NIRS) (The new Quantum Science Research and Development Agency starts operations in April 2016.). The Agency strives to coordinate and cooperate closely with the new agency to ensure that the separated R&amp;D operation is not disrupted. In addition, actions with respect to new regulation standards are performed in a well-planned and proper manner to safely and stably operate owned facilities.</p> <p>Based on the above, the Agency formulates its new mid to long-term objectives.</p>	<p>Expression is amended to be appropriate.</p>

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<p>III. Matters Concerning Administration of Operations, which put Utmost Priority on Safety</p> <p>1. Matters concerning ensuring safety</p> <p>Ensuring safety is the top priority for the administration of operations and we recognize that our nuclear facilities potentially handle hazardous materials and provide basic matters pertaining to safety management including legal compliance, actively promoting voluntary safety activities including “MONJU” and Tokai Reprocessing Plant, which are transiting to the decommissioning stage and ensuring nuclear safety related to facilities and operations. In addition, we manage new regulation standards in a well-planned and proper manner. <u>In particular, we will implement preventive measures related to accidents and troubles experienced in the past, contamination and internal radiation exposure of workers occurred in 2014 at the Plutonium Fuel Research Facility of Oarai Research and Development Center.</u></p> <p>(Omitted)</p> <p>2. Matters concerning nuclear security</p> <p>In managing nuclear materials etc., we comply with international agreements and relevant domestic laws for proper management and enhance nuclear security. <u>Moreover, the concept on Plutonium utilization and disposal shall be considered based on the “Basic Principles on Japan's Utilization of Plutonium (Japan Atomic Energy Commission decision on July 31<sup>st</sup> 2018)” and the Plutonium utilization plan shall be newly prepared and published in order to improve the transparency on the peaceful utilization of Plutonium.</u></p> <p>In addition, we properly perform operations related to the</p>	<p>III. Matters Concerning Administration of Operations, which put Utmost Priority on Safety</p> <p>1. Matters concerning ensuring safety</p> <p>Ensuring safety is the top priority for the administration of operations and we recognize that our nuclear facilities potentially handle hazardous materials and provide basic matters pertaining to safety management including legal compliance, actively promoting voluntary safety activities including “MONJU” and Tokai Reprocessing Plant, which are transiting to the decommissioning stage and ensuring nuclear safety related to facilities and operations. In addition, we manage new regulation standards in a well-planned and proper manner.</p> <p>(Omitted)</p> <p>2. Matters concerning nuclear security</p> <p>In managing nuclear materials etc., we comply with international agreements and relevant domestic laws for proper management and enhance nuclear security.</p> <p>In addition, we properly perform operations related to the</p>	<p>Addition of the description on the accident with contamination and internal radiation exposure of workers occurred at Oarai Research and Development Center.</p> <p>Addition of the description based on “Basic Principles on Japan's Utilization of Plutonium (Japan Atomic Energy Commission decision on July 31<sup>st</sup></p>

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transportation of nuclear fuel materials.	transportation of nuclear fuel materials.	2018)".
<p>IV. Matters Concerning to Maximization of the Achievements of R&amp;D and the Improvement of Quality of Any Other Operations</p> <p>1. R&amp;D in response to the accident at Fukushima Daiichi Nuclear Power Station</p> <p>(1) R&amp;D for decommissioning reactors</p> <p>The Agency shall make the best use of its own human resources and R&amp;D facilities and work on R&amp;D necessary for decommissioning of the Fukushima Daiichi Nuclear Power Station based on necessities in sites from mid to long-term perspectives including policies such as the strategic plan formulated by NDF and <a href="#">“Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO’s Fukushima Daiichi Nuclear Power Station” (Ministerial Meeting on measures to reactor decommissioning and in dealing with contaminated water in September 2017)</a>; hereinafter as referred to the “Mid-and-Long-Term Roadmap towards the Decommissioning”).</p> <p>(Omitted)</p> <p>(2) R&amp;D related to environmental recovery</p> <p>The Agency shall perform R&amp;D related to the recovery of the environment in light of the national policies and social needs such as “Basic Guidelines for Fukushima Reconstruction and Revitalization” (Cabinet decision in <a href="#">June 2017</a>).</p> <p>Specifically, using the Fukushima Environment Creation Center as a base of operations, the Agency shall develop infrastructure technology concerning building a comprehensive evaluation system for development of technology for environmental monitoring/mapping and environmental dynamics</p>	<p>IV. Matters Concerning to Maximization of the Achievements of R&amp;D and the Improvement of Quality of Any Other Operations</p> <p>1. R&amp;D in response to the accident at Fukushima Daiichi Nuclear Power Station</p> <p>(1) R&amp;D for decommissioning reactors</p> <p>The Agency shall make the best use of its own human resources and R&amp;D facilities and work on R&amp;D necessary for decommissioning of the Fukushima Daiichi Nuclear Power Station based on necessities in sites from mid to long-term perspectives including policies such as the strategic plan formulated by NDF and <a href="#">“Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO’s Fukushima Daiichi Nuclear Power Station” (Nuclear Emergency Response Headquarters/Council for the Abolition of TEPCO’s Fukushima Daiichi Nuclear Power Station in June 2013)</a>; hereinafter as referred to the “Mid-and-Long-Term Roadmap towards the Decommissioning”).</p> <p>(Omitted)</p> <p>(2) R&amp;D related to environmental recovery</p> <p>The Agency shall perform R&amp;D related to the recovery of the environment in light of the national policies and social needs such as “Basic Guidelines for Fukushima Reconstruction and Revitalization” (Cabinet decision in <a href="#">July 2012</a>).</p> <p>Specifically, using the Fukushima Environment Creation Center as a base of operations, the Agency shall develop infrastructure technology concerning building a comprehensive evaluation system for development of technology for environmental monitoring/mapping and environmental dynamics</p>	<p>Date is changed.</p> <p>Date is changed.</p>

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<p>and volume reduction of eliminated soil etc. in collaboration with the relevant organizations so that the technology developed can be transferred to the private sector etc. by the midst of the objectives period.</p> <p>To satisfy residents' needs for safety and security through these efforts, the Agency shall provide technologies and information etc. that contribute to the return of residents, planning of local authorities involved in the return and revitalization of agriculture and forestry in the community.</p>	<p>and volume reduction of eliminated soil etc. in collaboration with the relevant organizations so that the technology developed can be transferred to the private sector etc. by the midst of the objectives period.</p> <p>To satisfy residents' needs for safety and security through these efforts, the Agency shall provide technologies and information etc. that contribute to the return of residents, planning of local authorities involved in the return and revitalization of agriculture and forestry in the community.</p>	
<p>4. Basic and fundamental research and human resource development for nuclear power</p>	<p>4. Basic and fundamental research and human resource development for nuclear power</p> <p><u>(2) R&amp;D on the high temperature gas cooled reactor and its heat utilization technology</u></p> <p><u>Based on the Basic Energy Plan, the Agency shall perform R&amp;D on high temperature gas cooled reactors and associated heat utilization technologies to pursue the potential for further diversification and advancement of nuclear energy utilization.</u></p> <p><u>Specifically, as for the High Temperature Engineering Test Reactor (HTTR) that could contribute to the practical use of high temperature gas cooled reactors with intrinsic safety and is also expected to be applied in various industries including power generation and hydrogen generation etc., the Agency shall reduce the maintenance and management costs for HTTR during the time until its restart, giving highest priority to ensuring the safety. And, the Agency shall restart the stations immediately after receiving confirmation of conformity to the new regulation standards, based on "Future Process in R&amp;D related to the Development of High-Temperature Gas Furnace Technology" (the Working Group on the high temperature gas cooled reactor, the Nuclear</u></p>	<p>This part moves to "5. of IV." (due to transferring of the R&amp;D of the advanced reactor from the basic and generic researches, based on "Basic Energy Plan" and etc.)</p>



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<p>(2) Promotion of public utilization of specific advanced large research facilities</p>	<p><u>Science and Technology Committee, the Subdivision on R&amp;D Planning and Evaluation, the Council for Science and Technology, MEXT, September 2014) and the governmental policies such as studies related to the future concrete image of practical applications and prioritize R&amp;D and global cooperation that contributes to the verification of safety of high temperature gas cooled reactors, establishment of unique technologies and technology in connection with heat utilization systems. In particular, the Agency will commission an external committee to evaluate the R&amp;D progress and properly reflect it in 2016 for a connection test of the heat utilization system. In addition to these efforts, the Agency shall clarify challenges for practical application in the future of the results to be obtained, as well as a method to utilize the results etc. and proceed R&amp;D on element technologies concerning heat utilization including hydrogen production and development of human resources mainly for HTTR. In particular, as regards the hydrogen production technology, the Agency will complete engineering R&amp;D including reliability of hydrogen production on an engineering scale within this mid to long-term objective period, clarify the research goals and future practical use of the results and transfer the technology to private business operators from the viewpoint of economic efficiency and then summarize these research results and pave the way to transfer them to private business operators etc.</u></p> <p>(3) Promotion of public utilization of specific advanced large research facilities</p>	<p>Amending the item number.</p> <p>Amending the item number.</p>

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<p>(Omitted)</p> <p><u>(3)</u> Development of nuclear human resources and promotion of service facility uses</p> <p>(Omitted)</p>	<p>(Omitted)</p> <p><u>(4)</u> Development of nuclear human resources and promotion of service facility uses</p> <p>(Omitted)</p>	
<p>5. R&amp;D on Fast-Breeder Reactors (FBR)/<u>advanced reactor</u></p> <p>In the Basic Energy Plan, “Fast-Breeder Reactors Development Policy” (Decision by the Council of Ministers Related to Nuclear Energy in December 2016), <u>“Strategic Road Map” (Decision by the Council of Ministers Related to Nuclear Energy in December 2018) based on this policy and</u> Fast-Breeder Reactors (FBR) are expected to undertake new roles, not only by using uranium resources effectively in a conventional way, but also by reducing the volume and toxicity of radioactive waste and the technologies related to nuclear non-proliferation.</p> <p><u>In addition to the further improvement of safety, reliability and efficiency of the nuclear energy, regarded as the quasi-domestic produced energy in the Basic Energy Plan, the important viewpoint is that the innovation in the nuclear energy-related technologies is promoted with the corresponding escalation of various social requirements such as coexisting with the renewable energy, hydrogen production and heat utilization. Such technologies are expected to be applied to various industrial utilization including hydrogen production, therefore, the technology development on the high-temperature gas cooled reactor with inherent safety shall be promoted under the international cooperation. Furthermore, in order to promote developing new technologies which drastically improve the safety, reliability and efficiency in the nuclear energy utilization, such technology development shall be achieved with ensuring the strategic flexibility. The country shall indicate its</u></p>	<p>5. R&amp;D on Fast-Breeder Reactors (FBR)</p> <p>In the Basic Energy Plan, “Fast-Breeder Reactors Development Policy” (Decision by the Council of Ministers Related to Nuclear Energy in December 2016), Fast-Breeder Reactors (FBR) <u>are</u> expected to undertake new roles, not only by using uranium resources effectively in a conventional way, but also by reducing the volume and toxicity of radioactive waste and technologies related to non-proliferation.</p>	<p>Amendment due to transferring of the R&amp;D of the advanced reactor from the basic and generic researches</p> <p>Addition based on “Basic Energy Plan” and “Strategic Road Map.”</p>

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<p><u>long-term vision, and the industry shall make competition among various technologies, and select the appropriate ones for the domestic and international markets by taking advantage of creativity and wisdom.</u></p> <p><u>Under such a policy direction, the Agency has to widely share the accumulated knowledge mainly on the development of the fast breeder reactor and the high temperature gas cooled reactor with the private sector corresponding to the change in the social environment. And, under this point of view, it is required to maintain its research infrastructure in response to the needs of the private sector working on various technology developments.</u></p> <p><u>For above reasons, the Agency shall contribute to solving these challenges of Japan, diversifying the future energy policy and the innovation of the nuclear energy-related technologies by promoting R&amp;D, which will establish the verification technologies for Fast-Breeder Reactors (FBR) and support the upgrading of the advanced reactor technology on the high temperature gas cooled reactor.</u></p>	<p>The Agency shall contribute to solving these challenges of Japan and diversifying the future energy policy by promoting R&amp;D to establish verification technologies for Fast-Breeder Reactors (FBR).</p> <p><u>In addition, as for “MONJU,” efforts are made to implement safe and steady decommissioning based on the “Government policy for handling 'Monju” (Decision by the Council of Ministers Related to Nuclear Energy in December 2016).</u></p> <p>(1) Efforts to decommission “MONJU”</p> <p><u>The Agency shall establish a basic plan concerning decommissioning by April 2017, and improve the decommissioning system designed to gather knowledge in Japan and abroad. The Agency undertakes the necessary efforts, aiming to complete retrieval of fuel from a reactor core to a fuel pond (water pool) while safety is secured within about five and a half years since formulation of the basic plan concerning decommissioning. In addition, when advancing future efforts, the Agency shall prioritize</u></p>	<p>This part is moved to “7. of IV.” (New item on the decommissioning in Tsuruga district has been set based on “Basic policy on the decommissioning of MONJU (Decision by “Decommissioning of MONJU” Promoting Team on June 13 2017)” and etc.)</p>

Mid to long-term objectives (Proposed revision)	Current mid to long-term objectives	Remarks (reason)
<p><u>(1)</u> Global strategy planning aiming at the establishment of verification technologies for Fast-Breeder Reactors (FBR) and maximization of R&amp;D achievements</p> <p>To establish verification technologies for FBR, the Agency shall use experiences learned from R&amp;D on “MONJU” and the fast breeder laboratory reactor “Joyo,” which is used as an irradiation facility (hereinafter referred to as “Joyo”) and carry out R&amp;D on FBRs through participation in international projects such as the ASTRID reactor in France which is in the verification stage. To smoothly carry out these R&amp;Ds, the Agency shall obtain a confirmation of conformity with new regulation standards for Joyo, resume its operation and implement irradiation tests etc.</p> <p>Furthermore, through the participation in international projects such as the ASTRID reactor in France, it is necessary to sufficiently reflect past research results and accumulated technologies into the projects. The Agency shall use the necessary human resources and develop human resources with international negotiation skills. At the same time, the Agency shall make use of the project results in future R&amp;D. The Agency shall receive an intermediate evaluation for the R&amp;D achievements from external experts by the midst of objectives period and reflect it in future plans.</p> <p>To proceed <del>(1)</del> and above-mentioned R&amp;D, the Agency shall consider technical, economic and social risks in view of the efficient use of resources, reduction of high-level radioactive waste and toxicity etc. and maximize the results of safe and efficient R&amp;D of FBR. To achieve this, in light of the international trends in FBR R&amp;D, the Agency shall plan a global strategy for R&amp;D on FBR in consideration of a smooth transition to the verification process,</p>	<p><u>ensuring safety and endeavor to enhance local and other citizens' understanding above all in accordance with NRA.</u></p> <p><u>(2)</u> Global strategy planning aiming at the establishment of verification technologies for Fast-Breeder Reactors (FBR) and maximization of R&amp;D achievements</p> <p>To establish verification technologies for FBR, the Agency shall use experiences learned from R&amp;D on “MONJU” and the fast breeder laboratory reactor “Joyo,” which is used as an irradiation facility (hereinafter referred to as “Joyo”) and carry out R&amp;D on FBRs through participation in international projects such as the ASTRID reactor in France which is in the verification stage. To smoothly carry out these R&amp;Ds, the Agency shall obtain a confirmation of conformity with new regulation standards for Joyo, resume its operation and implement irradiation tests etc.</p> <p>Furthermore, through the participation in international projects such as the ASTRID reactor in France, it is necessary to sufficiently reflect past research results and accumulated technologies into the projects. The Agency shall use the necessary human resources and develop human resources with international negotiation skills. At the same time, the Agency shall make use of the project results in future R&amp;D. The Agency shall receive an intermediate evaluation for the R&amp;D achievements from external experts by the midst of objectives period and reflect it in future plans.</p> <p>To proceed <u>(1) and</u> above-mentioned R&amp;D, the Agency shall consider technical, economic and social risks in view of the efficient use of resources, reduction of high-level radioactive waste and toxicity etc. and maximize the results of safe and efficient R&amp;D of FBR. To achieve this, in light of the international trends in FBR R&amp;D, the Agency shall plan a global strategy for R&amp;D on FBR in consideration of a smooth transition to the verification</p>	<p>Amending the item number.</p> <p>Deletion.</p>

Mid to long-term objectives (Proposed revision)	Current mid to long-term objectives	Remarks (reason)
<p>effective and efficient resource allocation, maintaining and development of FBR technologies and human resources in Japan, agree policies with interested parties such as the government and contribute to policy planning etc.</p> <p>In addition, the Agency shall formulate a policy of FBR safety design standard draft and lead the international standardization of FBR safety design standards by using the Generation-IV International Forum (GIF) and <i>ASTRID cooperation</i> between Japan and <i>France</i>.</p> <p><u>(2) R&amp;D on the high temperature gas cooled reactor and its heat utilization technology</u></p> <p><u>Based on the Basic Energy Plan, the Agency shall perform R&amp;D on high temperature gas cooled reactors and the associated heat utilization technologies to pursue the potential for further diversification and advancement of nuclear energy utilization.</u></p> <p><u>Specifically, as for the High Temperature Engineering Test Reactor (HTTR) that could contribute to the practical use of high temperature gas cooled reactors with intrinsic safety and is also expected to be applied in various industries including power generation and hydrogen generation etc., the Agency shall reduce the maintenance and management costs for HTTR during the time until its restart, giving highest priority to ensuring the safety. And, the Agency shall restart the stations immediately after receiving confirmation of conformity to the new regulation standards, based on the “Future Process in R&amp;D related to the Development of High-Temperature Gas Furnace Technology” (the Working Group on the high temperature gas cooled reactor, the Nuclear Science and Technology Committee, the Subdivision on R&amp;D Planning and Evaluation, the Council for Science and Technology, MEXT, September 2014) and the governmental policies such as studies</u></p>	<p>process, effective and efficient resource allocation, maintaining and development of FBR technologies and human resources in Japan, agree policies with interested parties such as the government and contribute to policy planning etc.</p> <p>In addition, the Agency shall formulate a policy of FBR safety design standard draft and lead the international standardization of FBR safety design standards by using the Generation-IV International Forum (GIF) and <i>ASTRID cooperation</i> between Japan and <i>France</i>.</p>	<p>This part is moved from “4. of IV.”</p> <p>Addition based on “Basic Energy Plan.”</p>

Mid to long-term objectives (Proposed revision)	Current mid to long-term objectives	Remarks (reason)
<p><u>related to the future concrete image of practical applications and prioritized R&amp;D and global cooperation that contributes to the verification of safety of high temperature gas cooled reactors, establishment of unique technologies and the technology in connection with heat utilization systems. In particular, the Agency will commission an external committee to evaluate the R&amp;D progress and properly reflect it in 2016 for a connection test of the heat utilization system.</u></p> <p><u>In addition to these efforts, the Agency shall clarify challenges for practical application in the future of the results to be obtained as well as a method to utilize the results etc. and shall proceed R&amp;D on element technologies concerning the heat utilization including hydrogen production and development of human resources mainly for HTTR. In particular, as regards the hydrogen production technology, the Agency will complete engineering R&amp;D including reliability of hydrogen production on an engineering scale within this mid to long-term objective period, clarify the research goals and future practical use of the results and transfer the technology to private business operators from the viewpoint of economic efficiency and then summarize these research results and pave the way to transfer them to private business operators etc.</u></p>		
<p><u>7. Activities for verifying the decommissioning of nuclear facilities in Tsuruga district</u></p> <p>For MONJU, efforts are made to implement a safe and steady decommissioning <u>and to promote technology development necessary for decommissioning</u>, based on the “Government policy for handling 'Monju’” (Decision by the Council of Ministers Related to Nuclear Energy in December 2016).” <u>For advanced thermal reactor “Fugen,” the demolition and dismantling of nuclear reactor peripheral equipment, etc., shall be promoted and the</u></p>		<p>New item on the decommissioning in Tsuruga district has been set based on “Basic policy on the decommissioning of MONJU (Decision by “Decommissioning of MONJU Promoting Team on June 13 2017)” and etc.</p>

Mid to long-term objectives (Proposed revision)	Current mid to long-term objectives	Remarks (reason)
<p><u>necessary measures towards the discharge of spent fuel shall proceed as planned.</u></p> <p>In addition, when advancing the future efforts, the Agency shall prioritize ensuring safety and endeavor to enhance local and other citizens' understanding above all in accordance with the Nuclear Regulation Authority (NRA).</p>		<p>(partially moved from “5. of IV.”)</p> <p>At the same time, description on “Fugen” is added.</p>
<p><u>8.</u> Activities to promote industry-academia-government collaboration and gain trust from society</p> <p>Based on the Basic Energy Plan and the Fifth Science and Technology Basic Plan, we shall ensure the trust in society by strengthening collaboration among industry, academia and government to create innovation etc., supporting nuclear fuel cycle technology for private nuclear business operators, implementing global collaboration and contribution, carrying out active release of information, strengthening public relations and outreach activities as well as returning results to society. Furthermore, in handling information, the Agency shall pay attention to the handling of information on physical protection and the proper handling of intellectual property.</p>	<p><u>7.</u> Activities to promote industry-academia-government collaboration and gain trust from society</p> <p>Based on the Basic Energy Plan and the Fifth Science and Technology Basic Plan, we shall ensure the trust in society by strengthening collaboration among industry, academia and government to create innovation etc., supporting nuclear fuel cycle technology for private nuclear business operators, implementing global collaboration and contribution, carrying out active release of information, strengthening public relations and outreach activities as well as returning results to society. Furthermore, in handling information, the Agency shall pay attention to the handling of information on physical protection and the proper handling of intellectual property.</p>	<p>Amending the item number.</p>
<p>VII. Other Important Matters Concerning the Administration of Operations</p> <p>1. Establish an effective and efficient management system (2) Reinforcement of internal control</p> <p>To reinforce appropriate, effective and efficient internal controls, the Agency shall improve and operate an internal control environment including the thorough compliance by <u>all the executives and regular employees</u>, decision making by the management, improvement and operation of internal rules, risk management etc. and consistently review it. In addition, the Agency</p>	<p>VII. Other Important Matters Concerning the Administration of Operations</p> <p>1. Establish an effective and efficient management system (2) Reinforcement of internal control</p> <p>To reinforce appropriate, effective and efficient internal controls, the Agency shall improve and operate an internal control environment including thorough compliance, decision making by management, improvement and operation of internal rules, risk management etc. and consistently review it. In addition, the Agency shall regularly monitor and verify</p>	<p>Persons who should thoroughly comply are defined.</p>

Mid to long-term objectives (Proposed revision)	Current mid to long-term objectives	Remarks (reason)
<p>shall regularly monitor and verify development status and whether these functions effectively work well or not through internal audits etc. and strengthen the audit functions and system by auditors to evaluate them fairly and independently. To ensure reliability of R&amp;D activities and soundness of science and technology, the Agency shall enhance efforts to prevent fraudulent research in advance as an organization to deal with fraudulent research properly and clarify administrative responsibilities. In addition, the Agency shall enhance the system to respond in the event of research fraud.</p> <p>In addition, while referring to “<i>Dokuritsu Gyosei Hojin no Gyomu no Tekisei wo Kakuho surutame no Taisei to no Seibi</i> (Development of System Ensuring the Proper Operations of the Incorporated Administrative Agency)” (Notification by the Director-General of the Administrative Management Bureau, the Ministry of Internal Affairs and Communications in November 2014), the Agency shall make necessary efforts.</p>	<p>development status and whether these functions effectively work well or not through internal audits etc. and strengthen the audit functions and system by auditors to evaluate them fairly and independently. To ensure reliability of R&amp;D activities and soundness of science and technology, the Agency shall enhance efforts to prevent fraudulent research in advance as an organization to deal with fraudulent research properly and clarify administrative responsibilities. In addition, the Agency shall enhance the system to respond in the event of research fraud.</p> <p>In addition, while referring to “<i>Dokuritsu Gyosei Hojin no Gyomu no Tekisei wo Kakuho surutame no Taisei to no Seibi</i> (Development of System Ensuring the Proper Operations of the Incorporated Administrative Agency)” (Notification by the Director-General of the Administrative Management Bureau, the Ministry of Internal Affairs and Communications in November 2014), the Agency shall make necessary efforts.</p>	
<p>2. Matters concerning facilities and equipment</p> <p>The Agency shall steadily proceed with decommissioning of facilities shown in a reform implemented based on the basic direction of the reform. As for the exhibition facility, the Agency shall verify whether it should possess the facility or not at an early stage and if it no longer required, steadily dispose of it. The Agency shall strictly verify whether the Agency is required to continuously possess asset holdings other than the exhibition facilities, steadily promote disposals etc., under specific plans. In addition, taking into account the future R&amp;D needs and safety research needs for technical support to nuclear regulatory administration as well as repair/maintenance costs comprehensively, the Agency shall rapidly decommission the unused facilities and equipment which have</p>	<p>2. Matters concerning facilities and equipment</p> <p>The Agency shall steadily proceed with decommissioning of facilities shown in a reform implemented based on the basic direction of the reform. As for the exhibition facility, the Agency shall verify whether it should possess the facility or not at an early stage and if it no longer required, steadily dispose of it. The Agency shall strictly verify whether the Agency is required to continuously possess asset holdings other than the exhibition facilities, steadily promote disposals etc., under specific plans. In addition, taking future R&amp;D needs and safety research needs for technical support to nuclear regulatory administration, as well as repair/maintenance costs into account comprehensively, the Agency shall rapidly decommission unused facilities and equipment which have finished</p>	



Mid to long-term objectives (Proposed revision)	Current mid to long-term objectives	Remarks (reason)
<p>finished their roles with a view of efficiency of its operations. Also, the Agency shall formulate plans related to collecting and focusing on and decommissioning of the existing facilities and shall steadily <u>complete each of these processes. At the processes, the Agency shall make efforts with the assumption that the decommissioning is fundamentally a kind of work different from R&amp;D, based on “Midterm Summary by the Working Group for the Nuclear Facilities Decommissioning and etc., Atomic Science and Technology Commission” (Working Group for the Nuclear Facilities Decommissioning and etc., the Nuclear Science and Technology Committee, the Subdivision on R&amp;D Planning and Evaluation, the Council for Science and Technology, MEXT, April 2018). It is because that the decommissioning is mainly a process planning by combining the existing technologies, and its implementation as if it is an important work required to be steadily implemented with ensuring its safety and partially including some elements of R&amp;D.</u></p> <p>Furthermore, the Agency shall focus on effectively upgrading and developing facilities and equipment required to perform operations and comply with earthquake resistance and new regulation standards in a well-planned and proper manner.</p>	<p>their roles with a view of efficiency of its operations. Also, the Agency shall formulate plans related to collecting and focusing on and decommissioning of existing facilities and steadily <u>deal with</u> them.</p> <p>Furthermore, the Agency shall focus on effectively upgrading and developing facilities and equipment required to perform operations and comply with earthquake resistance and new regulation standards in a well-planned and proper manner.</p>	<p>Reflecting the concept in the midterm summary by the working group for the nuclear facilities decommissioning and etc.</p>
<p>4. Matters concerning personnel</p> <p>Based on the operation which gives the highest priority to safety, the Agency shall formulate a plan concerning personnel including active female participation and the diversification of researchers and develop a strategic <u>human resource management</u> to maximize R&amp;D achievements and perform operations effectively and efficiently. In addition, it shall properly and strictly implement the evaluation of abilities and operational performance of officers and staff and reflect the results on their treatment aiming at improving</p>	<p>4. Matters concerning personnel</p> <p>Based on the operation which gives the highest priority to safety, the Agency shall formulate a plan concerning personnel including active female participation and the diversification of researchers and develop a strategy to maximize R&amp;D achievements and perform operations effectively and efficiently. In addition, it shall properly and strictly implement the evaluation of abilities and operational performance of officers and staff and reflect the results on their treatment aiming at improving their motivation and</p>	<p>Amendment following the indication from Japan Atomic Energy Commission.</p>

Mid to long-term objectives (Proposed revision)	Current mid to long-term objectives	Remarks (reason)
their motivation and capacity and clarifying their responsibilities and appoint the right person in the right place to improve the ability of staff <u>and develop the leaders capable to perform internationally.</u>	capacity and clarifying their responsibilities and appoint the right person in the right place to improve the ability of staff.	