

## Disposition of Public Comments on the Strategic Plan: Fiscal Years 2014-2018<sup>1</sup>

No.	Commenter	Comment <sup>1</sup>	Disposition
<b>ABSTRACT- INTRODUCTION</b>			
1	Organization of Agreement States	Page 1, Abstract: The document states there are approximately 18,900 licenses. According to the November 18, 2013 licenses report, the NRC had 2,857 while the Agreement States had 17,988 for a total of 20,845. The Board recommends using the 20,845 as that is a published listing of the number of licenses in the US.	Comment not accepted. In response to another comment, we have decided that this level of detail is inappropriate for the abstract. The intent of the abstract is to convey a brief summary of the of the Plan rather than this level of detail about the NRC. The introduction has been modified to provides this information about about the NRC and the facilities it regulates, consistent with the text and numbers in the NRC Information Digest.
2	Organization of Agreement States	Page 7, Future Challenges: The Board recommends including “safe disposal of radioactive materials” in the “Future Challenges” bulletized list.	Comment not accepted: Ensuring the safe disposal of radioactive material is a current ongoing activity, not a future challenge. It is a subset of the strategic goal of ensuring the safe use of radioactive material and is addressed throughout the strategic plan.

<sup>1</sup> Page numbers refer to the Draft FY 2014-2018 Strategic Plan made available for public comment through FRN (Vol. 79, No. 43) dated March 5, 2014. This document is available at ADAMS Accession No. ML14023A605.

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3	Christopher Bergan	<p>Page 7, Future Challenges:            You list Key factors considered in developing this plan. I would like to see education of the public, the media, and all elected or appointed members of Federal Government included. One of the many lessons from nuclear incidents should be the cost of panic. When local officials and media do not have a basic understanding of nuclear power, poor decisions are made. In Chernobyl the accident was covered up for several days - and Iodine tablets were not distributed. In Fukushima Dai-Ichi hospitals moved frail patients that didn't survive relocation—a few displaced persons committed suicide in despair - and a significant portion of the province abandoned their homes and businesses when radiation levels never increased much above background amounts. These proved high societal costs. Add to that the meddling of then PM Naoto Kan in not allowing plant workers to implement established emergency protocols (which precipitated most of the subsequent reactor problems). For years US utilities and the Natural Gas industries have educated the public about the rotten egg smell added to natural gas. Whether directly or by delegating to another agency, the NRC should break the current cycle of fear and ignorance by educating the public, the media, and members of government about Nuclear Energy. Another misunderstood aspect of Nuclear Energy is it's separation from military nuclear operations. I know from personal experience that many people think civilian nuclear power plants have been used to produce weapons grade materials. This misunderstanding and accompanying mistrust hampers both the NRC and utilities whenever licensing or construction of nuclear facilities is addressed. Local opposition (and costs to utilities) is exacerbated because civilian and military nuclear operations are not recognized as being distinct operations.</p>	<p>Comment not accepted. The NRC currently educates the public, the media, and elected/appointed government representatives via public meetings, press briefings, and various other state and local government and community outreach activities. Under Crosscutting Strategies, Openness, the strategic plan addresses the NRC's intent to conduct its regulatory activities as openly as possible with meaningful stakeholder involvement.</p>

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4	Christopher Bergan	Page 7, Future Challenges: You mention reviewing applications involving new technologies such as small modular reactors (SMRs) and medical isotope production facilities (MIPFs). I believe these applications need to be streamlined as the US has fallen behind other countries (China, Canada, UK, India, France, Russia, S. Korea)—and several more are looking to join or improve their standing in the nuclear club (Brazil, Argentina, S. Africa). This concern dovetails into known declines in the demographics, experience, and knowledge of the US workforce - also mentioned on page 7. Concerning SMRs; encouragement for developing and licensing nontraditional reactor cores is sorely needed—whether uranium, plutonium, or thorium fueled.	Comment not accepted. Level of detail not appropriate for inclusion in SP. Also, the NRC does not promote nuclear industry nor individual technologies, such as nontraditional reactor cores. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies
5	Christopher Bergan	Page 8, Future Challenges: On page 8 you mention an ongoing need to cooperate with and support the development of nuclear safety regulations around the world. Part of those should include the review of the 50+ year old policy of Linear-No-Threshold (LNT), about which France has expressed reservations. Research (possibly through MIPFs) to specifically address the possibility of Hormesis should be supported.	Comment not accepted. Use of particular model of dose response is at a level of detail that is inappropriate for inclusion in the NRC's strategic plan.
6	LL Rad Waste Forum	Page 8, Future Challenges: The last bullet in the Future Challenges section should include concrete actions in addition to monitoring to ensure the safety of radioactive materials.	Comment not accepted. Level of detail not appropriate for the Strategic Plan

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<b>THE PLAN</b>			
7	Jon Morrow	Page 10, Mission: I believe the NRC Mission Statement needs to be amended to reflect "to provide a competitive regulatory environment that will allow America to maintain its world leadership in nuclear energy while providing world class safety."	Comment not accepted. The NRC was established by law to independently regulate the civilian use of radioactive materials to protect public health and safety and the environment, not to promote or maintain NRC leadership in nuclear energy.

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8	Steve Moniz	<p>Page 10, Mission and Goals:            I appreciate this opportunity to comment on the NRC's future direction. In college I learned the value of strategic planning. However, there are some minor differences between what I see in your strategic plan and what I learned in Urban Planning 101 and from the Army. In particular, I feel you need to add the phrase "<b>and promote</b>" to your goal statement. Urban Planning 101 teaches a three-tiered construct of a Goal, Policies that support the Goal, and Projects (where money is actually spent) that implement the Policies. The Army construct does not quite match this. They start with the commander's Vision. This is a vision of where the commander wants to take his unit. It has no restrictions. It is just a desired future. A military mission statement belongs to another construct, closer to operating expenses than investment funds. For the purposes here, I consider a mission statement and the strategic goal synonymous, as are policies and objectives. There is only one strategic goal in the Urban Planning 101 framework. It has one positive thing to be achieved (the vision) and one negative thing to be avoided. The second part is important in that it provides balance - a dose of reality. Otherwise, the "goal" is unhindered by such mundane things as budgets or public opinion. For a government agency, such an unbalanced mission leads to abuse. The Federal Highway Administration and Corps of Engineers come to mind, literally bulldozing across the country. In contrast, the Federal Trade Commission regulates trade "with minimum disruption." The Federal Communication Commission "regulates and promotes" the use of the airwaves. (Note that in terms of the free market, the negative clause is first here.)</p>	<p>Comment not accepted. The commenter recommends expanding the mission/goals of NRC and the content of the strategic plan to promote nuclear power. The NRC was established by the Energy Reorganization Act of 1974 from a portion of the Atomic Energy Commission to independently oversee—not promote—the civilian use of radioactive materials to protect public health and safety and the environment.</p>

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8	Steve Moniz (continued)	<p><i>(continued from previous page)</i></p> <p>For a government agency, the positive clause in the strategic goal is generically "Promote the public welfare." The thing to be avoided is generally cost, so the strategic goal usually ends with "at minimum cost." ("At minimum risk" is another common qualifier.) A specific agency will have a more detailed positive clause. For the NRC, that section of the mission statement is "license and regulate the Nation's civilian use of radioactive materials to protect the public health and safety, promote the common defense and security, and protect the environment." The current goal needs a balancing clause. As with the FCC, I would suggest "regulate and promote." You can easily justify the increased use of nuclear power for all three reasons given.</p> <ol style="list-style-type: none"> <li>1) Nuclear is healthier and safer than the alternatives,</li> <li>2) It promotes energy security,</li> <li>3) It is better for the environment.</li> </ol> <p>In the context of objectives that support the strategic goal, I would move licensing to the next level down. Licensing is a means to achieve the end (regulation), not a goal in itself. Similarly, the current goals, "ensure the safe use of radioactive materials and the secure use of radioactive materials," are policies/objectives. I can't see the whole draft strategic plan, so I don't know your current set of policies/objectives. As a separate issue, I hope you have one that promotes the development of advanced nuclear concepts, such as the Gen IV initiative. Again, my main point is to add the phrase "and promote" to your strategic goal. I don't know how much you can rephrase your goal/mission statement without an Act of Congress. But how hard can that be?</p>	See previous row for comment disposition.

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9	Christopher Bergan	<p>Page 10, Mission:            You give a Mission Statement. I would suggest the following modification: The Nuclear Regulatory Commission educates US citizens on all aspects of the civilian nuclear industry, licenses and regulates the Nation's civilian use of radioactive materials to protect public health and safety, promotes the common defense and security, protect the environment, and provide a competitive regulatory environment that will allow the USA to preserve its historical leadership in Nuclear Energy Technology. I would amend the Vision Statement to read: A trusted, independent, transparent, and effective nuclear regulator/educator.</p> <p>The NRC Organizational Values is quite good. I would again stress that the Service to the public and others who are affected by our work is best addressed by directly educating the public. As an example: in 1938 Orson Welles created public panic with a radio broadcast. I can envision a similar panic should a nuclear incident again happen in the USA. Familiarization with nuclear terminologies and processes is in the public's best interest.</p> <p>I also like your two Strategic Goals. I will leave it to your committee to insert any of my concerns within these goals. To summarize: I believe the USA may lose its historic dominance of civilian nuclear power unless changes are implemented in the NRC's Road Map. Specifically, education of the public; and encouragement for developing and licensing of SMRs should be among the priorities. I believe efficient, affordable energy will be key for the USA to remain a dominant nation in the 21st century. The NRC's energy road map could be instrumental in paving the way.</p>	<p>Comment not accepted. The commenter recommends expanding the mission/goals of NRC and the content of the strategic plan to promote nuclear power. The NRC was established by the Energy Reorganization Act of 1974 from a portion of the Atomic Energy Commission to independently oversee—not promote—the civilian use of radioactive materials to protect public health and safety and the environment.</p>

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10	Rod Clemetson	<p>Page 10, Mission: I believe one of the things to be lacking in the mission of the NRC is the lack of competition. It is true that security is mentioned in your mission but I believe that is most often interpreted as meaning military applications, such as powering nuclear submarines and aircraft carriers. I believe that to keep America's national interest secure we should be leading the world in the development of new nuclear technologies. This is due to economic considerations and the possibility of another country (China) developing an economically and technologically disruptive technology before America. I believe the strategic plan should be amended to include competition, and the development of a thorium based Molten Salt Reactor. Furthermore, I believe we need a regulatory environment that will allow industry to develop this technology in an accelerated time from (i.e. competitive time frame).</p>	<p>Comment not accepted. The commenter recommends expanding the mission/goals of NRC and the content of the strategic plan to promote nuclear power. The NRC was established by the Energy Reorganization Act of 1974 from a portion of the Atomic Energy Commission to independently oversee—not promote—the civilian use of radioactive materials to protect public health and safety and the environment. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>



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11	Alex Blascyk	<p>Page 10, Mission:                      We believe one of the things to be lacking in the mission of the NRC is the lack of competition. It is true that security is mentioned in their mission but we believe that is most often interpreted as meaning military applications, such as powering nuclear submarines and aircraft carriers. The Energy From Thorium Foundation believes that to keep America's national interest secure that we should be leading the world in the development of new nuclear technologies. This is due to economic considerations and the possibility of another country developing an economically and technologically disruptive technology before America. We believe that submissions that help to amend the strategic plan to include competition will help bolster the argument that America needs to be developing a thorium based Molten Salt Reactor and we need a regulatory environment that will allow industry to develop this technology in an accelerated time frame (i.e. competitive time frame).</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies</p>
12	Gabriel Elkaim	<p>Page 10, Mission:                      I believe one of the things to be lacking in the mission of the NRC is the lack of competition. It is true that security is mentioned in their mission but I believe that is most often interpreted as meaning military applications, such as powering nuclear submarines and aircraft carriers. To keep America's national interest secure that we should be leading the world in the development of new nuclear technologies. This is due to economic considerations and the possibility of another country developing and economically and technologically disruptive technology before America. I believe that submissions that help to amend the strategic plan to include competition will help bolster the argument that America needs to be developing a thorium based Molten Salt Reactor and we need a regulatory environment that will allow industry to develop this technology in an accelerated time from (i.e. competetive time frame).</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>

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13	Duane Lawton	<p>Page 10, Mission:            A critical element of NRC policy needs to be catalyzing and encouraging aggressive development of new nuclear reactor technology. This initiative is possible without any direct federal funding. Technologies such as LFTR should be fostered. For too long, private concerns have shied away from such development because of the perceived (and real) risk of failure due to excessive regulations and to frivolous lawsuits. It has proven virtually impossible to collect the needed venture capital in this environment. This is a significant national security issue, because other countries—notably China- -have been increasing their emphasis on such development. It would be a serious impact to our economy and to national prestige if we were to end up buying this technology.</p> <p>This is a significant environmental issue, because new reactor technology is capable of providing base load electricity in excess of our forecasted needs for at least a century. This is something that wind, terrestrial solar and other "renewables" cannot do. It would also be lower in CO2 production, and more economical (sans lawfare and unnecessary regulation). Another environmental plus is the elimination of 99% or more of the issues with current nuclear power...less waste, no meltdown or explosion risk (and attendant radioactivity fears, usually exaggerated), less waste and disruption in the fuel supply process, and the consumption of existing dangerous nuclear wastes from the legacy reactors. In addition, new nuclear is a genuine opportunity to eliminate electrical power generation using coal and other fossil fuels.</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies</p>

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14	Robert Hargraves	<p>Page 10, Strategic Goals:                      The NRC strategic plan safety goal is "Strategic Goal: Ensure the safe use of radioactive materials. For this goal, a successful outcome is one in which the Nation can continue to use radioactive material for civilian purposes while preventing significant radiation exposures and Significant releases of radioactive material that may harm people or the environment. I recommend that the NRC strategy include developing a new, scientific, observed evidence basis for the concepts of "safe" and "significant radiation exposures" and "significant releases of radioactive material." I recommend the concept of "may harm people and the environment" be replaced with "will harm people of the environment." Regulations are now based on LNT (linear no-threshold theory) and ALARA (as low as reasonably achievable) policies. Although the National Academy of Sciences 2006 Biological Effects of Ionizing Radiation VII report endorses LNT, there has been ongoing controversy about LNT validity and considerable new research that contradicts LNT. ALARA is a corollary to LNT ALARA is based on "achievable" which is a function of technology, not of effects on health. Radiation detection technology can be very sensitive and is continually improving, tightening the restraints of ALARA. The word "reasonable" is vague so should not be a regulatory basis. ALARA creates high, unnecessary costs for all stages of the nuclear fuel cycle. Worse, ALARA creates the public fear of all radiation, impeding the benefits of nuclear power—clean, affordable, safe, non-polluting electric power. I recommend that the NRC strategic plan replace LNT and ALARA policies with new, scientific, evidence-based, quantitative bases for all NRC rules and regulations, and that all rules and regulations that now depend on LNT or ALARA, directly or indirectly, be replaced.</p>	<p>Comment not accepted. Use of particular model of dose response (the linear no-threshold theory) and the ALARA policy are at a level of detail that is inappropriate for inclusion in the NRC's strategic plan.</p>

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15	Danna Johansen	<p>Page 10, Strategic Goals:                      The NRC needs to modify its first strategic goal. It currently says: (1) to ensure the safe use of radioactive materials...                      It SHOULD say: (1) to maximize public safety from the use of radioactive materials...                      The intention here is to broaden the vision of the NRC to allow you to include the expected effects of the other alternatives to radioactive materials. For example, you currently (AFAIK) will make rules intended to improve public safety seeing only the effects of the rule on NPPs, but do NOT look at the fact that making NPPs too expensive will result in coal plants that are much MORE dangerous to the public safety than just leaving the NPP alone. Please broaden your viewpoint to include the consequences of your rule making.</p>	<p>Comment not accepted. Expanding the text in the manner suggested would result in an expansion of the mission of the NRC beyond its current mandate. NRC has a safety mission which does not include making nuclear power more cost effective than other energy technologies.</p>

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<b>SAFETY</b>			
16	Organization of Agreement States	Page 11, Safety Strategy 1.1-2 The Board recommends adding “Continued training for NRC and Agreement State staff to ensure the safe use of radioactive materials.”	Comment not accepted. Bullet 5 addresses the intent of the comment at the appropriate level of detail for the Strategic Plan.
17	N. Prasad Kadambi (ex-NRC employee)	Page 11, Safety Strategy 1.1-2 Under “Objective 1.1: Prevent and mitigate accidents, ensure radiation safety, and protect the environment.” and within “Strategies and Contributing Activities” modify 6 <sup>th</sup> bullet under 1.1-2 to recognize that NRC remains committed to following OMB Circular A-119 and will work with the Nuclear Energy Standards Coordination Collaborative to improve standardization in nuclear technology. It is suggested that this bullet read as follows: “Participate in the development of domestic consensus codes and standards and international standards to ensure that they are soundly based. Work with the Nuclear Energy Standards Coordination Collaborative consistent with OMB Circular A-119 to improve standardization in nuclear technology, and determine whether substantial safety improvements can be identified and incorporated in NRC requirements.”	Comment not accepted. The comment is at a level of detail that is inappropriate for inclusion in the Strategic Plan. If this comment were accepted, we would also need to include other similar organizations and standards. The comment can be considered at a lower level as part of the NRC standards program.
18	Organization of Agreement States	Page 12, Safety Strategy 1.1-3: The Board recommends including “Review Certificate of Compliance applications for Type B shipping containers” in the 1.1-3 section.	Comment not accepted. This task is at a level of detail inappropriate for inclusion in the Strategic Plan.

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19	Marvin Lewis, P. E. (Retired.) 3-6-2014.	<p>Page 11, Safety: Dear NRC, Thank you for allowing me to comment on security and safety draft 2014 Strategic plan.</p> <p>There are so many omission that I cannot see how the NRC is ready to speak to security and safety.</p> <p>1. Helium has leaked from the Yellowstone Park caldera. This might be a warning that the caldera of the Yellowstone super volcano is ready to erupt. There is no mention anywhere in the NRC about this present danger because the Yellowstone caldera is 60000 yrs overdue to erupt. I suggest that the issue of an impending yellowstone caldera eruption should be investigated before issuing a plan for safety and security.</p> <p>2. Table S-3 has been shown to be highly deficient and inaccurate by comments by Lewis, Resnikof, and Makajoni in the Waste Confidence caes NUREG 2157 GEIS. Until and unless Table S-3 shows that emissions are safe and correct, safety and security cannot be accurately evaluated.</p> <p>3. The attitude of the NRC employees are that the nuclear fleet of reactors must be safe. The problem is that safety is defined as meeting rules and regulations. Since Table S-3 is used in the determination of how safe the nuclear output is, and since Table-S-3 is deficient, the staff cannot provide a determination that the nuclear plants and fuel cycle is safe. These issues and others need to be answered before an adequate strategic plan can issue.</p> <p>Respectfully submitted.</p>	<p>Comment not accepted. The U.S. Nuclear Regulatory Commission (NRC) has received a petition for rulemaking from multiple environmental organizations. The petition requests that the NRC revise and integrate all regulations that relate to the environmental impacts of spent fuel storage and disposal, including "Table S-3" (10 CFR 51.51). The petition was docketed as NRC-2014-0014, and made available on April 21, 2014 (79 FR 22055). The NRC will resolve these issues through its well-established petition for rulemaking process, separate from this revision of the 2014-2018 Strategic Plan.</p>

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20	Alan Morris	<p>Page 13, Safety Strategy 1.1-5:            This is in response to your request for comments on drafting the 2014–2018 NRC Strategic Plan. My comments pertain to your objective to promote regulations and strategies designed to “Ensure the NRC’s readiness to respond to incidents and emergencies involving NRC-licensed facilities and radioactive materials, and other events of domestic and international interest.” I applaud the NRC for its willingness to consider steps that will enhance public safety through the development of sound measures to protect the public. I further recognize that any modification of existing strategies, regulations, or policies must be consistent with overall Commission goals, and make sense from a cost-benefit perspective. My comments are focused on existing NRC strategies regarding the acquisition and distribution of potassium iodide (KI) tablets. These tablets protect the thyroid from radioactive iodine (RAI) which could be released in large quantities in a serious reactor accident or from a nuclear weapon. Given its highly carcinogenic properties, RAI would probably injure more people in a serious accident than all other released substances combined. RAI is a volatile substance which can become an aerosol if released under pressure. Once in atmospheric suspension it can be windblown for hundreds of kilometers, consequently endangering large numbers of people located at great distances from the release point. This has already happened. The NRC has estimated that RAI released at Chernobyl caused at least 6000 cases of childhood thyroid cancer, with approximately 97% of the first 750 cases taking place more than 50 km downwind of the accident. No other released product caused this level of danger. In fact, as the NRC</p>	<p>Comment not accepted. The NRC continues to distribute and replenish potassium iodine (KI) tablets to States that have commercial nuclear power reactors. The distribution and replenishment of KI tablets is coordinated with other Federal partners, including the U.S. Food and Drug Administration (FDA) and the Federal Emergency Management Agency (FEMA), as well as State and local county representatives. To date, the NRC has distributed over 46 million KI tablets.</p>

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20	Alan Morris (continued)	<p><i>(continued from previous page)</i>                      reported, ten years after the accident, “except for thyroid cancer, there has been no confirmed increase in the rates of other cancers, including leukemia, attributed to [the accident].” It should be noted that roughly similar thyroid effects were observed in Japan following the 1945 bombings there. NRC experts, of course, are sensitive to the danger of RAI and acknowledge KI’s protective ability. That is why current Commission strategy calls for the distribution of the tablets to certain populations who might be at risk should a release occur. However, for reasons which are difficult to understand, the existing strategy limits the distribution to nuclear plant workers and those living just 10 miles around US nuclear facilities—despite the demonstrated ability of RAI to travel well-beyond this range, and the potential downwind danger out to at least 50 miles. Limiting KI’s protection cannot be justified. Clearly, should a nuclear incident occur, KI will be needed outside the current distribution area, and will almost certainly be demanded by members of the public who will feel threatened. One can only wonder how those living 11 or more miles away from a damaged reactor will respond upon learning that only officials and their neighbors living near the reactor have access to the drug, while they and their children are being denied its benefits.</p>	See previous row for comment disposition.



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20	Alan Morris <i>(continued)</i>	<p><i>(continued from previous page)</i></p> <p>It is difficult to formulate a coherent argument in support of the current strategy. KI is safe, effective, longlasting, and easy to store and distribute. The annual cost of a stockpiled dose could be as low as 2 to 4 cents. The tablets are small, lightweight, and take up very little room. Nine-thousand can fit in a carton the size of a microwave oven, which could be kept in a closet at schools, firehouses, police stations, etc. Yet the amount of KI available in the US today is only enough to protect a tiny fraction of the millions of people who might require it should a serious accident or terrorist incident occur. (The source of my information on KI availability comes from the fact that I am the President of the company that supplies the product.)</p> <p>My hope is that NRC Strategic Planning will consider the deficiencies in current accident response strategies and institute new programs and policies to assure the availability of KI for everyone who might need it. More information on this matter, and a source listing of documents and quotations referenced in these comments, can be found at <a href="http://www.kifacts.com">www.kifacts.com</a>.</p> <p>Sincerely, Alan Morris Anbex Alan@anbex.com</p>	See previous row for comment disposition.

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21	Rosemary Greene	<p>Page 11-13, Safety:            This document is responsive to NRC request for input on a proposed Strategic Plan: Fiscal Years 2014–2018. Specifically it addresses key elements of the NRC’s regulatory program include minimizing the likelihood of accidents and reducing the consequences of an accident should one occur. Impacts of radiation releases or extended plant shutdown include severe socioeconomic impacts. The Plan will also influence the design and impact technologies supporting small modular reactor design certification and license applications. PWR nuclear power plants rely on the integrity of every steam generator heat transfer tube to prevent radioactive primary coolant entering the secondary coolant circuits. Every steam generator tube is implicitly an integral part of the PWR reactor primary containment. PWR steam generator tube failure can, and has, resulted in:</p> <ul style="list-style-type: none"> <li>• radioactive steam release to atmosphere,</li> <li>• major economic penalties to the public, power utilities and the nation.</li> </ul> <p>A major flaw in PWR steam generators is failure such that any steam generator’s heat transfer tube allows radioactive water from the plant primary circuit to enter the secondary circuit. One outcome is over-pressuring the secondary loop and release of radioactive steam outside the containment. Steam Generators are an ‘Achilles heel’ for all power plant owners.</p>	<p>Comment not accepted. Specific modifications to steam generator tube monitoring technology are at a level of detail that is not appropriate for inclusion in a strategic plan. However, in Regulatory Effectiveness Strategy 1, bullets 2 and 3, we address the agency’s approach to identifying and resolving safety issues. Regulatory Effectiveness Strategy 2, bullet 1 addresses the update of our regulatory framework to focus enhancements on risk-significant areas. In addition, many areas in the strategic plan address the priority the NRC places on effectively utilizing operating experience, such that it is identified, reviewed and utilized as appropriate. In application, this includes for example lessons learned from the San Onofre experience, and specifically areas related to tube integrity monitoring and vendor oversight.</p>

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21	Rosemary Greene (continued)	<p><i>(continued from previous page)</i></p> <p>Failure of any heat transfer tube is a breach of the reactor's primary containment. Mr. Karwoski, a Senior Advisor for steam generators at the NRC, states; "Steam generators provide vital technical and safety functions at many U.S. nuclear power plants." Rupture of a steam generator tube is considered a design basis event by NRC. This reference also states NRC places a high priority on ensuring that possible steam generator tube degradation is carefully addressed through inspections, strict repair criteria and the monitoring of water chemistry to detect radiation leaking from the primary to the secondary side of the plant. Water chemistry monitoring alone is demonstrably insufficient to detect mechanical damage mechanisms such as tube vibration, or prevent release of radioactive materials to the environment. Specialized, rapid response, steam tube damage instrumentation technology needs to be an essential plan component. NRC's only current requirement for steam tube damage monitoring instrumentation is eddy-current monitoring during plant shutdown , not real-time monitoring for events likely to result in tube, and hence core containment failure(s). Current NRC requirements are insufficient to prevent or mitigate economic and social impacts of steam generator tube failures.</p>	See previous row for comment disposition.

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21	Rosemary Greene (continued)	<p>(continued from previous page)</p> <p>Therefore I contend the Plan should be responsive to the following issues:</p> <ul style="list-style-type: none"> <li>• NRC needs to define and require effective and timely, steam generator fault protection systems in all PWR operating nuclear power plants. The current NRC monitoring approach did not protect against or prevent the economic and safety problems of an incident, such as the recent steam generator problems at the San Onofre Nuclear Generation Station (SONGS). These problems were followed by permanent shutdown of the reactor and eventually abandonment of the Nuclear Power Plant with extensive financial and economic impacts that may take decades to mitigate.</li> <li>• NRC needs to define and require effective and timely tube failure or fault protection systems on steam generators in all PWR operating nuclear power plants. Lack of such mandated requirements and steam generator protection instrumentation has resulted in severe economic outcomes and reduced public confidence in provision of safe, economic nuclear power in the USA. Power plant verified and validated steam generator monitoring and protection systems are available that would protect the steam generator from incidents such as at SONGS.</li> <li>• Lack of mandated requirements for steam generator protection instrumentation to effectively detect steam generator tube vibration and/or tube integrity resulted in reduced public confidence in safe nuclear power, and negatively impact USA nuclear economy.</li> </ul>	See previous row for comment disposition.

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21	Rosemary Greene (continued)	<p><i>(continued from previous page)</i></p> <p>In addition; sodium cooled small modular reactor designs are being designed and developed. Designs include sodium heated steam generators for which an additional steam generator tube failure mechanisms are possible due to sodium water reactions and generation of hydrogen gas. <b>Supporting information:</b> NRC regulate steam generator lifetime or design changes through an update of technical specifications. NRC must plan to make real-time, online monitoring of steam generator tube bundles a requirement through an update of technical specifications for both new and existing steam generators to protect plant safety; significantly reduce economic vulnerabilities to utilities, protect plant operational staff, and reduce possibility of radioactive release to the environment. Their updated plan must reflect any research, development or implantation requirements to meet such a goal. Plant owners recognize steam generators have a limited life compared to expected station lifetime, and plant operators for economic reasons will endeavor to replace steam generators prior to any operational problems. Effective monitoring systems will safely increase the period between steam generator replacements and improve nuclear energy economics. Steam generator lifetimes can be extended by effective NRC requirements and reliable tube damage monitoring. NRC/ACRS communications acknowledge importance of Steam Generator tube failures “As noted by the Committee, steam generator tube integrity research continues to be an important area of research. Substantial progress has been made on understanding the initiation and progression of (<i>chemical</i>) degradation mechanisms. The staff also has worked toward an improved knowledge of steam generator response under severe accident conditions.</p>	See previous row for comment disposition.

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21	Rosemary Greene <i>(continued)</i>	<p><i>(continued from previous page)</i></p> <p>Confirmatory research continues to be necessary as surveillance methods evolve and new techniques are employed by the industry. The staff's efforts are enhanced by the sharing of operational experience and research results made possible by the International Steam Generator Tube Integrity Program." NRC in such publications implies chemical control of the coolant water, improved tube fabrication and welding, and loose part monitors provide damage mitigation. SONGS and other NPP incidents do not support such contentions. For example:</p> <p><b>SONGS Economic Impact:</b> SCE reported undetected, damaging tube bundle vibrations were present shortly after installation of two new SONGS steam generator. Lack of effective detection instrumentation and tube damage regulation or criteria may have contributed to burden the Utility with these economic impacts to return the NPP to full operation:</p> <ul style="list-style-type: none"> <li>• Commit to spend nearly a billion dollars (or even more) on a repair that Mitsubishi had not yet designed, had not established would be successful and had not offered to pay for;</li> <li>• At least five years wait for the replacement tube bundle to be installed, even if everything went perfectly;</li> <li>• Committing to pursuing the replacement option before knowing whether or not the NRC would permit restart at reduced power, or when that permission might be granted, or if the other uncertainties noted above were resolved.</li> </ul>	See previous row for comment disposition.

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21	Rosemary Greene <i>(continued)</i>	<p><i>(continued from previous page)</i></p> <p>These, and probably other business reasons led to Southern California Edison surrendering its license to operate SONGS power plant. These are not the only financial consequences. Plant closure is estimated to remove \$11 billion annually from the California economy, and also result in higher utility bills in the State (~15%) due to higher replacement energy costs. US Energy Information Administration (EIA) has reported a 59% increase in wholesale power prices in the state, which it ascribes largely to the extended outages at the two units.</p> <p><b>SONGS Safety Impact:</b> USNRC issued a ‘preliminary white finding of low to moderate safety significance’ for SCE ‘Failure to comply with SONGS Technical Specification for maintenance of steam generator tube integrity and leakage control’ and an ‘apparent violation of the requirements of 10 CFR PART 50’. (The finding does not carry any fines or penalties). SCE’s Senior Vice President and Nuclear Officer (Peter Dietrich) raised no arguments to the ‘white finding’ in his formal response to USNRC’s Stephen A Reynolds! To date, NRC responses to SONGS and similar incidents can appear to support impressions they do not consider steam generator tube monitoring, radioactivity releases, or severe socio-economic consequences to need immediate research and development programs to correct this problem. The PLAN must correct any such impressions with a robust program that includes effective on-line monitoring for breaching of primary containment due to tube integrity failure or by any BY ANY IDENTIFIED OR POSSIBLE METHOD.</p>	

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22	Jeffery Skov	<p>Please accept the attached comments for the record relative to the U.S. Nuclear Regulatory Commission's (NRC's) draft NUREG-1614, Volume 6, "U.S. Nuclear Regulatory Commission Strategic Plan, Fiscal Years 2014-2018," pursuant to the agency's Federal Register Notice dated March 5, 2014 (79 FR 12531), under Docket ID NRC-2013-0230.</p> <p><i>(Note: The comments are 6 pages long and the United States Court of Appeals attachment on Yucca Mountain are 29 pages long. Listed below is a summary of comments.)</i></p> <p>1) For any litigation decided against the NRC by a court of competent authority, once final, we should perform an analysis to determine the root and contributing causes of the adjudged wrongdoing; an "extent of condition" evaluation to determine whether the adjudged wrongdoing similarly afflicts NRC's implementation of other statutes and regulations; <i>i.e.</i>, statutes and regulations beyond those that were the subject of the litigation; immediate corrective actions to address any wrongdoing identified by the extent of condition evaluation; formulation and implementation of robust corrective actions to prevent recurrence based on the root cause analysis and extent of condition evaluation; and issuance of a report documenting the above.</p>	<p>Comment not accepted. The Strategic Plan is a five year look at agency activities setting forth high level agency planning and objectives; not a document to provide any discussion of licensing review (or associated considerations) of a particular facility.</p>



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22	Jeffery Skov <i>(continued)</i>	<p><i>(continued from previous page)</i></p> <p>2) We should commit that an Office of Legal Ethics be established—to be independent from the NRC's Office of the General Counsel (OGC)—to advise the Commission on (1) the ethics of legal strategies advocated by and litigation management decisions taken by the OGC; (2) apparent disconnects between Commission pronouncements, actions, and inactions, on the one hand, and NRC's mission, vision (currently in draft), organizational values, and implementation of positive safety culture traits, on the other; and (3) "other considerations such as moral . . . factors, that may be relevant to the [NRC's] situation," consistent with Rule 2.1 of the American Bar Association's (ABA's) Model Rules of Professional Conduct ("Model Rules").</p> <p>3) We should commit that the NRC's annual Congressional budget justification document (i.e., NUREG-1100, currently Vol. 30) must clearly disclose instances where sufficient funds are not being requested to satisfy the statutory mandates of the agency, along with the rationale and consequences of each such omission.</p>	See previous row for comment disposition.

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<b>SECURITY</b>			
23	Organization of Agreement States	Page 14, Security Strategy 2.1-2.1-1: The Board recommends adding "Continued training for NRC and Agreement State staff regarding security issues, measures and regulations" into section 2.1-1.	Comment not accepted. Training for NRC and Agreement State staff is an on-going part of the existing program. Comment does not suggest strategic changes or major enhancements to the program so it does not rise to the level for inclusion in the strategic plan.
24	Organization of Agreement States	Page 15, Security Strategy 2.1-2, Activity 2: The Board recommends including "for nuclear facilities" after "including force-on-force exercises" in the first bullet at the top of page 15.	Comment not accepted. It is understood that force-on-force exercises are conducted on categories of licensees for which they are appropriate.

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<b>CROSS-CUTTING STRATEGIES</b>			
25	Organization of Agreement States	Page 17, Regulatory Effectivenss: The Board recommends that a discussion of the Cumulative Effects on Regulations (CER) be included in "Regulatory Effectiveness" section.	Comment Accepted. However the revision will be made in the participation strategy under Openness rather than Regulatory Effectiveness: Change bullet 4 on page 20 to "Interact with the public through all stages of the rulemaking process by holding public meetings, publishing draft guidance with proposed rules and final guidance with final rules, requesting specific comments on cumulative effects of regulation, and holding a public meeting on implementation during the final rule stage."
26	Organization of Agreement States	Page 17, Regulatory Effectivenss: The Board recommends including "for nuclear facilities" at the end of the second bullet sentence.	Comment accepted. Text will be revised as follows: "...and physical and cyber attacks <b>at nuclear facilities</b> "

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27	N. Prasad Kadambi (ex-NRC employee)	Page 17, Regulatory Effectiveness Strategy 2: Add as the second bullet the following: "Bring to a conclusion the work initiated in response to the Near Term Task Force under Recommendation 1, as well as the work by the Risk Management Task Force (which produced NUREG-2150), to propose an integrated risk management regulatory framework for nuclear power facilities. The integration provided by such a framework will address, at a minimum, safety margins, defense-in-depth, and cost-benefit analyses."	Comment not accepted. This activity is covered under Regulatory Effectiveness Strategy 2, Activity 1: "Use risk-informed and performance-based regulations and inspection approaches, where appropriate, to enhance the effectiveness of the regulatory framework, clarify expectations for the regulated community, eliminate unnecessary rules and other regulatory encroachments, and focus agency resources on activities most important to safety."

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28	Richard Armknecht	<p>Page 18, Regulatory Effectiveness Strategy 2:            I am concerned with the last bullet point of the "Contributing Activities" for "Regulatory Effectiveness Strategy 2," which states that the NRC will strive to "License emerging technologies that meet regulatory requirements (e.g., small modular reactors)." I believe that, as it is worded, the objective effectively makes technology subservient to regulation. It considers the regulatory requirements to be immutable—even where a possible emerging technology has the promise of assisting the NRC in meeting its overarching goals of ensuring the safe and secure use of radioactive materials. Such possible emerging technologies include fluid fuel reactors (such as the LFTR), reduced moderation reactors, brayton cycle power generation, and the use of spent nuclear fuel (the export of spent PWR fuel for fabrication into "DUPIC" fuel would certainly reduce the need for the storage of such spent fuel in American facilities). Clearly, the scope of "emerging technologies" in the nuclear field is extensive and (as with the LFTR) would include substantially proven technologies that have not yet been developed into commercial power plants.</p> <p>My comment is not specifically directed at any specific technology, but at the assumption that technology is to be subordinate to regulations. As an analogy, suppose that, in 1900, a regulatory body was formed in America to require people to preserve all items made of iron or steel. Regulations were accordingly issued directing the application of paint, tar, oil, etc. Also suppose that such regulatory body would "license emerging alloys of iron that meet regulatory requirements." In 1915, stainless steel came to America. How would stainless steel have been licensed then?</p>	<p>Comment accepted. The bullet has been modified as follows:  <b>Prepare to license</b> License emerging technologies <del>that meet regulatory requirements (e.g., small, modular reactors)</del> <b>by identifying and resolving policy, technical, and licensing issues, and making necessary modifications to the regulatory framework.</b></p>

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29	Richard Armknecht (continued)	<p>(continued from previous page)</p> <p>Clearly the technology had changed the "rules" of what would be required to prevent corrosion. But where the regulations are adamant, such emerging technology is not accorded the full and fair consideration that it deserves. Perhaps a more flexible approach to licensing—one that looks to the technology and its inherent benefits which can obviate the need for the application of a regulatory requirement in that instance—could be employed. The private letter ruling system used by the IRS comes to mind. As applied in this context, persons considering employing an emerging technology could seek a ruling (on a case-by-case basis) for the relaxation of a regulatory requirement upon the demonstration that such requirement is not applicable (according to the laws of physics) to the technology at issue.</p>	See previous row for comment disposition.
30	LL Rad Waste Forum	<p>Page 18, Openness:</p> <p>As NRC is considering proposed revisions that would amend Part 61 of Title 10 of the <i>Code of Federal Regulations</i> (10 CFR), "Licensing Requirements for Land Disposal of Radioactive Waste;" the Strategic Plan should direct staff to directly communicate with and seek feedback specifically from, and give enhanced consideration to responses from, representatives of the sited states on the proposed revisions to 10 CFR Part 61 as stated in a resolution unanimously passed by the LLW Forum's Board of Directors (and previously transmitted to NRC) on October 23, 2013. The LLW Forum resolution may be found in the <i>LLWNotes</i>, September/October 2013, pp. 5-6 as located at <a href="http://www.llwforum.org/pdfs/LLWFORUMNOTES2013SepOct.pdf">http://www.llwforum.org/pdfs/LLWFORUMNOTES2013SepOct.pdf</a>.</p>	Comment accepted, in part. Comment addresses outreach on a specific project and does not to make a strategic change in what we do. However, the higher level intent of this comment is included in Crosscutting Strategy 3— Collaboration, under Openness.

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<b>APPENDICES</b>			
31	LL Rad Waste Forum	Pages 25, Appendix A—Key External Factors Regarding Objective 2.1 (page 26), additional concrete actions should be taken to reduce the risk from sealed sources without a sector-specific credible threat.	Comment not accepted. Level of detail not appropriate for a Strategic Plan; listing specific actions for source security is beyond the proper level of detail.
32	Organization of Agreement States	Page 28 Appendix C—Planned Program Reviews The Board recommends that the NRC include an item in Appendix C regarding the Regulations program review including how Cumulative Effects of Regulations (CER) will be included.	Comment not accepted. The work on the Cumulative Effects of Regulation is a process improvement activity rather than a program review activity.
33	N. Prasad Kadambi (ex-NRC employee)	Page 29, Appendix D—Glossary: The draft Strategic Plan does not contain the definition of “Defense-in-Depth.” Such a definition was part of all previous versions of the Strategic Plan and has been used as a reference cited in numerous publications. A source of some confusion has been the discrepancy between the definition in the Strategic Plan and the one that occurs in the NRC website’s Glossary. This opportunity should be used to incorporate consistent definitions. It would be quite acceptable to continue to use the current definition as follows: “Defense-in-Depth: An element of the NRC’s safety philosophy that employs successive compensatory measures to prevent accidents or lessen the effects of damage if a malfunction or accident occurs at a nuclear facility. The NRC’s safety philosophy ensures that the public is adequately protected and that emergency plans surrounding a nuclear facility are well conceived and will work. Moreover, the philosophy ensures that safety will not be wholly dependent on any single element of the design, construction, maintenance, or operation of a nuclear facility.”	Comment not accepted. This term is not referenced in the Plan.

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<b>GENERAL COMMENTS</b>			
34	Clark Elliott Nicholas Negoescu	<u>First</u> , NRC to guarantee the supply side of nuclear fuel material from national rather than foreign sources. <u>Second</u> , NRC resolves within the next 24 months, to issue a decree for the safe storage of spent nuclear fuel by NRC to the DOE, and also as an addendum to the safe storage rule established by Congress in 1982, for this site (either existing or new) be established. <u>Third</u> , NRC (within the next 12 months), to establish within it's budget, a facility for the safe reprocessing of MOX, and for the disposal of weapons grade material back to commercial nuclear fuel grade material (4.5% or less).	Comments not accepted. Not consistent with NRC's regulatory mission.
35	Casey Thromahlen	Your organization has an admirable dedication to safety, which is evident in the practically flawless operational history of civilian nuclear power plants in the United States. Unfortunately these exacting safety standards are not applied as rigorously in competing energy industries; I don't think that view is controversial. I'm concerned that continued singular focus on safety of the nuclear industry unintuitively leads to worse safety and economic competitiveness of the overall energy industry, as dirtier and less safe energy sources beat nuclear operators to market. All Americans would benefit from an energy mix that had a much higher proportion of power produced by fission, but that general interest is all too easily defeated by special interests which are less easily demonized.	Comment not accepted. The NRC was established by law to independently regulate the civilian use of radioactive materials to protect public health and safety and the environment, not to encourage the growth of the nuclear sector of the energy industry.



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35	Casey Thromahlen (continued)	<p><i>(continued from previous page)</i></p> <p>The NRC's predecessor, the AEC, had a dual mission to promote nuclear safety and to promote the use of nuclear power. I believe Americans would be better served if the NRC specifically sought to preserve American competitiveness and leadership in civilian nuclear power. The Canadian Nuclear Safety Commission is a good model; the main feature Canada gets right, in my opinion, is emphasis on performance based licensing criteria that strives to be technology neutral. The current NRC framework makes licensing costs and timelines extremely uncertain for any reactor design outside of traditional light water reactors. The NRC should preemptively adopt a framework to handle all of the designs approved by the Generation IV forum as worthy of further development: the Molten Salt Reactor; the Lead-Cooled Fast Reactor; the Sodium-Cooled Fast Reactor; the Gas-Cooled Fast Reactor; the Very High Temperature Reactor; and the Supercritical Water-Cooled Reactor. Providing an expedited framework for demonstration plants using these designs would fundamentally improve the safety and competitiveness of the US nuclear industry. No amount of careful regulation can bring a Generation II PWR up to passive safety standards, or reduce the quantity of spent nuclear fuel produced. The last point I want to emphasize is the importance of a closed nuclear fuel cycle. Political difficulties have made permanent geological repositories for spent nuclear fuel a non-starter. In the interim SNF continues to pile up at aging reactors, requiring ongoing maintenance and control. The NRC should emphasize reactor designs that improve the logistics profile of SNF and/or fuel reprocessing. I would also note that several molten salt reactor designs do not require any fuel reprocessing and can be used to close the fuel cycle of the existing nuclear fleet.</p>	See previous row for comment disposition.

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36	Alexandre Ederer	You guys spend million on green energy which requires huge amounts of oil and land to produce, nuclear proves to be modular and lower on a carbon footprint, can re-use its waste (new gen systems) and create cheaper isotopes for cancer, deep space research and fusion. Give nuclear a second chance.	Comment not accepted. The comment does not contain any specific suggestions for modifying the Strategic Plan.
37	Darryl Siemer	Regulations should be based upon demonstrable/testable facts, not "principles," theories, or political correctness. The IPCC has just reminded us (again) that Mankind's addiction to fossil fuels (which of course, includes us here in the USA) is rapidly pushing the earth's climate to a tipping point apt to cause mass extinctions before the end of this century - which may even include the majority of humanity. The most reasonable way to address that problem - rapid implementation of a genuinely sustainable nuclear renaissance (i.e., with breeder reactors -preferably ones which make/use 233U instead of 239Pu) - is rendered almost impossibly expensive/difficult by the NRC's approach to regulation; i.e., rules & decisions based upon fine sounding words (e.g., "best") and the sorts of principles embodied by acronyms like "LNT" and "ALARA" rather than upon quantitative reasoning. Another consequence of this approach to regulation/oversight is that has turned most of the USA's reprocessing waste management exercises (e.g., Hanford's "WTP") into unnecessarily complex, multi-billion dollar, boondoggles which, of course, erects additional barriers to implementing any sort of "nuclear" solution to the World's energy-related problems.	Comment not accepted. The comment does not contain any specific suggestions for modifying the Strategic Plan.

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38	Virgil Fenn	<p>Please note that this comment is in reference to Docket ID NRC-2013-0230. In 1934 it was reasonable to adopt the linear-no-threshold model (LNT) for estimating the potential danger from radiation because almost nothing was known about the health effects except that Madam Curie died of apparently radiation related cancer on July 4 of that year. In retrospect, we now know that she must have been exposed to large doses throughout her career but it is seldom noted that she lived 10 years longer than the average for women in France at that time. Almost all experience with radiation in that early period involved activities and doses that are considered to be huge now. And our knowledge of the complexities of cancer was also almost primitive. Even today, the variety of cancers and the multiplicity of possible causes is staggering. It no longer is reasonable to think that a single ionizing particle could cause a cancer. But that is what must be possible for the LNT model to apply. If multiple ionizing events are required to cause a cancer, then the effects of the earlier events must persist until the cancer finally starts. Basing regulations on the LNT model no longer achieves the NRC's mission "to protect the public health and safety. The ratchet effect of requiring the lowest achievable level of radiation has led to problems detecting and measuring such levels because the natural background levels are much higher, although not as high as when life first evolved. Indeed, we may not be getting enough radiation. But it is the opportunity costs of requiring the lowest achievable level of radiation that fail to protect the public health and safety.</p>	<p>Comment not accepted. Use of particular model of dose response (the linear no-threshold theory) is at a level of detail that is inappropriate for inclusion in the NRC's strategic plan.</p>

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39	Bruce Garry	<p>Subject: Docket ID NRC-2013-0230, Comments on the NRC's FY 2014-2018 Strategic Plan</p> <p>The NRC conducts environmental reviews (Plan 1.1-3) to ensure that actions comply with the National Environmental Policy Act of 1969. Typically NEPA reviews are limited to site-specific environmental concerns, and do not provide global source life-cycle environmental impact evaluations. For major projects, like nuclear power generation, global source life-cycle environmental impact evaluations need to be included in the NRC Strategic Plan for the reasons that are discussed below.</p> <p>Protecting the environment is a global event. The potential for Climate Change is also a global event. When you turn on a light switch you use energy and its "clean"—no emissions. You then look at the power source and let's assume it's also "clean." If you now stop looking, why didn't you stop when you received no emissions when you first turned on the light bulb? If the power source was nuclear power with parts manufactured all over the world (with emissions), then turning on the light was a global environmental event. Claiming an energy source provides "clean" energy based solely on the site where the electrical power is generated is misleading. It doesn't matter when in the life-cycle or where the generation occurs, what does matter is where the emissions occur and taking responsibility for those emissions.</p>	<p>Comment not accepted. These comments regarding the methodology used in NEPA reviews are at a level of detail that is inappropriate for inclusion in the NRC Strategic Plan.</p>

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39	Bruce Garry <i>(continued)</i>	<p><i>(continued from previous page)</i></p> <p>Subject: Docket ID NRC-2013-0230, Comments on the NRC's FY 2014-2018 Strategic Plan</p> <p>The NRC conducts environmental reviews (Plan 1.1-3) to ensure that actions comply with the National Environmental Policy Act of 1969. Typically NEPA reviews are limited to site-specific environmental concerns, and do not provide global source life-cycle environmental impact evaluations. For major projects, like nuclear power generation, global source life-cycle environmental impact evaluations need to be included in the NRC Strategic Plan for the reasons that are discussed below.</p> <p>Protecting the environment is a global event. The potential for Climate Change is also a global event. When you turn on a light switch you use energy and its "clean"—no emissions. You then look at the power source and let's assume it's also "clean." If you now stop looking, why didn't you stop when you received no emissions when you first turned on the light bulb? If the power source was nuclear power with parts manufactured all over the world (with emissions), then turning on the light was a global environmental event. Claiming an energy source provides "clean" energy based solely on the site where the electrical power is generated is misleading. It doesn't matter when in the life-cycle or where the generation occurs, what does matter is where the emissions occur and taking responsibility for those emissions. A principled science based evaluation must look at the full global impact of any energy source to factually report its environmental effectiveness. Both NEPA and global source life-cycle environmental impact evaluations are necessary for a complete environmental understanding of any electrical generation power plant.</p>	See previous row for comment disposition.

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39	Bruce Garry (continued)	<p><i>(continued from previous page)</i></p> <p>A global source life-cycle environmental impact evaluation would identify the total emissions, including those from equipment manufacturing, construction, operation, fuel and through decommissioning. To normalize the emissions data the expected total power generated over the plant's licensed life would be determined based upon proven past performance of similar designs. The most environmentally acceptable energy source would then be the lowest number (emissions/kilowatt-hour) determined by total emissions divided by the expected total power generated. In Summary, including the development and implementation of a global source life-cycle environmental impact evaluation tools in your Strategic Plan: FY 2014-2018 provides the following benefits:</p> <ul style="list-style-type: none"> <li>• A principled science based tool for factually determining total global environmental impacts,</li> <li>• Aligns cause and effect—measure total global emissions to determine global environmental impacts,</li> <li>• A basis for comparing the environmental effectiveness for different types and sizes of power generating plants including specific site and network requirements,</li> <li>• Promotes informed decision-making by federal and state agencies by making detailed information concerning complex project environmental impacts available to both agency leaders and the public,</li> <li>• Determines a baseline and provides a basis for industry to manage nuclear plants global and life-cycle environmental impacts,</li> <li>• Supports NRC Mission to protect the environment, and</li> <li>• Supports NRC Vision as a trusted, independent, transparent, and effective nuclear regulator.</li> </ul> <p>Thank you for the opportunity to comment on your Strategic Plan. Should you have any questions or need additional information, please contact me.</p>	See previous row for comment disposition.

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40	Robert Stinhaus	<p>Input for NRC's Strategic Plan to provide the agency's long-term, results-focused goals and objectives and its proposed strategies for achieving them for the planning period. Dear Sirs:</p> <p>The structure of NRC is radical and leads to regulatory overshoot at times of major nuclear accidents. Once put in place, NRC regulation is rarely, if ever, taken back off of the books—even after decades of demonstrated safe operation by the US nuclear industry. The US needs balanced nuclear regulation that simultaneously</p> <ol style="list-style-type: none"> <li>1) encourages the growth of the highly technical nuclear industry</li> <li>2) ensures public safety</li> </ol> <p>Current NRC regulatory structure observes only point 2—(ensure public safety) as its single pointed goal. In the long run, this structural defect in NRC gives rise to unwarranted levels of obstructive regulation that kills innovation that would make nuclear energy safer. We are well beyond the point where more nuclear regulation makes US nuclear safer. Additional NRC regulation today only has the effect of pricing nuclear technology out of consideration for US communities needing power. Unwarranted levels of US nuclear regulation currently forces US communities to invest in less intrinsically safe fossil fuel or renewable energy power plants. Excessive NRC regulation not wisely guided by sound cost-benefit analysis makes overall energy generation in the United States less safe as it prices up intrinsically safer nuclear power while forcing US communities to choose to build less safe fossil fuel or renewable energy power plants instead.</p> <p><i>(Note: The commented provided 4 additional pages of supporting text)</i></p>	<p>Comment not accepted. The NRC was established by law to independently regulate the civilian use of radioactive materials to protect public health and safety and the environment, not to encourage the growth of the nuclear sector of the energy industry.</p>

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41	Ed Falis	Please consider funding the development of prototype Liquid Fluoride Thorium reactors. The Chinese are going to corner this market because they are investing in it.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
42	Steve Paul	I am not expert of this but I certainly think Thorium needs very large investments & works as a major energy source for the US as quickly as possible without delay. Thank you.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.



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No.	Commenter	Comment <sup>1</sup>	Disposition
43	Michael Edenfield	<p>As a member of the public not employed by the nuclear energy industry, I encourage the commission to more explicitly support a regulatory environment that supports fast-tracked commercial development of the thorium-based molten salt reactor process, so that the United States can begin to lead the world on safe, next generation nuclear power. Right now, Molten Salt Reactor technology developed at Oak Ridge in the 1960s is collecting cobwebs while light water reactors continue to be the basis for our nation's nuclear power. While some companies in the United States are beginning to dust off the research and build businesses around molten salt processes, the entire regulatory process is built around uranium-based light water reactors and therefore alternative nuclear process companies have an enormous hurdle to jump to be given a competitive edge. Unfortunately, original research funded by US taxpayers will now be first commercialized by competition from overseas unless our regulatory environment changes in such a way that will expedite technological growth and competition within an entrenched industry. In its battle to control smog and pollution, China recently announced it will expedite commercialization of thorium-based nuclear reactors within 10 years, down from its original goal of 25 years.[1] It is very likely the chosen process will be a Molten Salt type reactor. As word about thorium-based molten salt reactors spreads among the public, communities of like-minded advocates are asking why we don't use a nuclear process that very likely:</p> <ol style="list-style-type: none"> <li>1) Reduces long-term storage needs by a several orders of magnitude</li> <li>2) Decreases proliferation and weaponization risks</li> <li>3) Reduces environmental catastrophe risk</li> <li>4) Utilizes a more abundant fuel source</li> </ol> <p>Thank you for considering my comment. I want to see the US lead the world on the inevitable transition to safer nuclear power.</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>

## Disposition of Public Comments on the Strategic Plan: Fiscal Years 2014-2018<sup>1</sup>

No.	Commenter	Comment <sup>1</sup>	Disposition
44	James Tyrer	<p>The NRC needs to realize that their regulatory regime is retarding progress in the development of new reactor designs, specifically Generation IV reactors. The NRC needs to take the necessary steps to reduce the bureaucratic delays in approving designs for such reactors which are ready for production and also to simplify the process of developing emerging designs such as the Molten Salt Reactor. The single most important insight which the NRC should gain from the 2011 nuclear accident at Fukushima Dai-ichi is that there are inherent issues with reactors with water cooled cores (LWRs) and although the new Westinghouse AP1000 reactor has some excellent design features which serve to minimize these issues, there really are not any possible engineering solutions which eliminate the problems with LWRs. The ultimate solution to improve safety is to eliminate the water cooled core.</p> <p>So, by delaying the introduction of gas cooled reactors (HTGRs) and liquid metal IFRs, although this may be done in the name of safety, the NRC has actually been delaying the deployment of safer reactors which runs counter to your purpose. That is the unfortunate counterproductive effect of regulatory conservatism. It is a side effect of all regulation. The NRC needs to take affirmative steps to try to avoid these negative consequences of well meaning regulation having the opposite effects. Also, due to the delay in United States development of new reactor designs, our country is falling behind in the world market for nuclear technology. The NRC needs to avoid contributing to this problem.</p> <p>In short, the NRC needs to see that regulation does not retard progress.</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>

## Disposition of Public Comments on the Strategic Plan: Fiscal Years 2014-2018<sup>1</sup>

No.	Commenter	Comment <sup>1</sup>	Disposition
45	Keith Woodward	Please provide a pathway to fast track development of molten salt reactors (MSR) any restrictions on the use of thorium should be lifted, small modular designs should be encouraged.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
46	James Sentman	In the interest of the security of our nation, both real and economic and environmental, it is necessary to have competing sources of nuclear power and a nuclear industry capable of advancing the science and designs in a competitive timeframe. Modern systems such as thorium based molten salt reactors as well as small modular reactors burning more traditional fuel are absolutely vital to the future of both the united states and the world. We need a regulatory environment that will allow industry to develop these reactor technologies in an accelerated time frame so as to be competitive with the rest of the world. America needs to be developing a liquid thorium reactor system.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.

## Disposition of Public Comments on the Strategic Plan: Fiscal Years 2014-2018<sup>1</sup>

No.	Commenter	Comment <sup>1</sup>	Disposition
47	Steven Kraus	<p>I believe our future lies in Ohio competing with China to develop the first MSR (Molten Salt Reactor) capable of producing emissions free electricity, very safely, and at a very affordable cost. The attributes of the MSR coupled with plasma gasification will allow the MSR and plasma gasifier to produce synthetic natural gas, synthetic gasoline, and synthetic diesel fuel, from any carbon based material. This means it can consume trash (and sewage) while producing various synthetic and ultra clean fuels. MSR's can be built on an assembly-line and Ohio knows a thing or two about assembly production. MSR's can run on the element thorium and a popular design is a LFTR (Liquid Fluoride Thorium Reactor), they are inherently safe, and produce no long-lived nuclear wastes. To learn more about MSR's and LFTR's and the element thorium visit <a href="http://www.Th90.org">www.Th90.org</a>. Creation of a Thorium Molten Salt Reactor Laboratory at Plum Brook NASA. Creation of an economic boom for Ohio with high paying jobs and affordable energy. Ohio will become a dominate world leader in energy production. Thorium Molten Salt Reactors can consume spent reactor fuel rods, thus eliminating the need to bury hazard nuclear waste in the Yucca Mountains or Ontario. Thorium Molten Salt Reactors produce life saving medical isotopes (Actinium-225 and Molybdenum-99) that are in high demand in the cure for cancer. Thorium Molten Salt Reactors are very proliferation resistant.</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>
48	Robert Williams	<p>My three children are naturalized citizens of the USA - I'm their father and still South African. I'd really appreciate it if the USA develops a Liqueid Fluoride Thorium Reactor (LFTR). I believe it would help to secure their futures and that of my grandchildren. The whole concept was proved and demonstrated at ORNL during the sixties and seventies and all that remains is engineering design and testing to make it safe and resilient. I believe it can be done and especially so by the USA. I believe that climate change is upon us. I believe that MSR's in general can generate CO2 emission-free energy. I believe that renewables will not scale up to the task.</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>

## Disposition of Public Comments on the Strategic Plan: Fiscal Years 2014-2018<sup>1</sup>

No.	Commenter	Comment <sup>1</sup>	Disposition
49	Charles Bagwell	<p>Thorium energy research needs to be funded, supported and promoted by Congress, NRC and DOE. Thorium, an element born in a Super Nova Star explosion, made its way to earth and settled in as a mining waste, and a nuisance to Rare Earth Miners all over the World. Thorium is one of the most energy dense substances on the Planet. One gram of Thorium contains 83 Million BTU. One pound contains 3.7 Trillion. Compare that with one pound of Anthracite coal at 13 thousand BTU per pound. It wasn't until recently that Thorium was recognized as a potential energy source. All it requires is a 33 pound critical mass and an external Neutron source to start a transmutation process that releases the stored energy in the atom to produce heat that can power a Steam, or hot air driven, Electric Generator. They can be very small and fit into a diversified distributed energy portfolio. Please don't let foreign Governments take the lead in developing Thorium energy conversion plants. We need to lead the way right here in America.</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>
50	Alexander Parkhurst	<p>The NRC has a responsibility to the citizens of the United States to encourage, fund and test a Thorium Molten Salt Reactor. Is there a person at the NRC who has the technical experience, critical thinking skills and a future oriented policy mindset to bring this technology forward? If not then could the NRC/DOE please hire someone or farm it out to Kirk Sorensen at FLIBE. It is well known in the community that the DOE is helping the Chinese with MSR technology invented in the US. Since MSR technology was started in the US why are we giving this IP and technology to the Chinese? This makes absolutely no sense whatsoever.</p> <p>I am not in the nuclear business, just a citizen seeing a great technology buried for no reason at all.</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>

## Disposition of Public Comments on the Strategic Plan: Fiscal Years 2014-2018<sup>1</sup>

No.	Commenter	Comment <sup>1</sup>	Disposition
51	Anonymous	The future of the American way of life depends on an immediate, Manhattan-Project level development and deployment of Thorium MSR technology. All other programs and projects should be halted immediately and all attention focused on the Liquid Fluoride Thorium Reactor (LFTR). Perfect it, commercialize it, mass produce it and get it online everywhere. The Chinese are working on it already, and if we don't beat them to the punch here, our economy will collapse. Please, do something right for a change!	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
52	Harold Beading	Since 1993 the federal govt has spent approximately 165 billion dollars on green energy projects and research. I would rather see a greatly accelerated effort towards LFTR. The United States govt ran an experimental molten salt reactor at Oak Ridge for 20,000 consecutive hours in the late 60's, but it was a victim of budget cuts despite the Senate testimony of Alvin Weinberg who tried to convince our benevolent leaders of that time of the immense future value in this groundbreaking U.S. research. I plead to you today to please consider investing the public tax dollars where they will bring the biggest bang for the buck. I am a 60 year old retired union carpenter whose world was opened to new ideas 7 years ago when I bought my first computer. I sincerely hope that our regulatory agencies can finally prove Winston Churchill's comment wrong when he said, "You can always count on the Americans to do the right thing, after they've tried everything else." Thank you for your time and your service.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.

## Disposition of Public Comments on the Strategic Plan: Fiscal Years 2014-2018<sup>1</sup>

No.	Commenter	Comment <sup>1</sup>	Disposition
53	Scott Medwid	I would like to see an accelerated path to re-opening the Molten Salt Reactor development That was done at ORNL. We need to make in easier for American Companies to conduct research and development of this promising Generation 4 Technology so the US can catch up to the Chinese TMSR work that is accelerating from a 25 year development effort to a TEN YEAR development effort. China came to Oak ridge a few years ago and legally copied the old 1960's MSRE program notes. They have read the material looked into the engineering and are developing the technology. We need Gen-4 fluid fueled breeder and burner reactors ASA	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
54	James Dick	We need a regulatory environment that will allow industry and research centers to develop the Molten Salt Reactor fueled with Uranium, TRU waste, old Weapon Fuel, and Thorium in an accelerated time frame.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.

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No.	Commenter	Comment <sup>1</sup>	Disposition
55	Edward Pheil	<p>Thanks for the opportunity to comment on the NRC's future plans. I think the NRC needs to reduce resources on minor non-safety related details of nuclear plant operation, keep them focused on the bigger picture. They should also focus more on radiation hormesis in radiation protection work rather than the unscientific LNT basis. The NRC should focus less effort on providing an ultimate long lived material repository and focus more on up to 500 year regional interim repository to store fuel until it can be reprocessed. Work on developing fuel reprocessing rules to allow reprocessing, particularly expanding the pyro-processing technique to use the 97% of the unused fuel being removed from LWR's. Devote more resources to develop converters, and breeders to more effectively use fuel with each pass through the reactor. This includes both fast and thermal versions, but particularly Gen IV concepts. Special effort should be applied to liquid fueled molten salt reactors (LF-MSR) for inherent safety, 99% fuel utilization, reduced plant, fuel, and fuel reprocessing cost. They also provide higher temperatures for higher efficiency, less water use, and high temperature process heat to further reduce green house gas production. LFMSR's can eliminate all materials, coolants, and processes that could produce fission product dispersion. The reactors can be made to be self controlling, and passively safe. The fast versions in particular, can use any fuel ultimately U235, natural U, depleted U, spent fuel, Pu, TRU's, consume weapons grade Pu, Th, but thermal versions can consume more fuel varieties than LWR's. The goal is to reduce the cost of reducing the impact on the environment while also still increasing safety, and reducing proliferation concerns.</p> <p>The Gen IV rated the LFMSR as the most ready of the Gen IV plants to be implemented comparable with standard gas reactors, but without the radioactive dispersal mechanism of high pressure in gas</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>



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No.	Commenter	Comment <sup>1</sup>	Disposition
55	Edward Pheil (continued)	<i>(continued from previous page)</i> reactors. The NRC should work to allow collection and use of thorium and uranium from rare earth element, iron, phosphate mining activities to enable collection of U and Th fuels as multi-purpose rather than single purpose mining, and enhancement of these other mining interests for the benefit of the country. Use of these passively safe high temperature reactors would reduce fossil fuel use and production of massive climate change impacts from the gasses and reduce deaths from the pollutions emmitted to the atmosphere and water systems.	See previous row for comment disposition.
56	Fred Lockwood	I am a strong supporter of investment in renewable energy, however I also consider nuclear to be an important technology for the generation of affordable, abundant and most importantly clean energy. In this regard, I strongly endorse the following; "The Energy From Thorium Foundation believes that to keep America's national interest secure that we should be leading the world in the development of new nuclear technologies. This is due to economic considerations and the possibility of another country developing and economically and technologically disruptive technology before America. We believe that submissions that help to amend the strategic plan to include competition will help bolster the argument that America needs to be developing a thorium based Molten Salt Reactor and we need a regulatory environment that will allow industry to develop this technology in an accelerated time from (i.e. competetive time frame)."	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.

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No.	Commenter	Comment <sup>1</sup>	Disposition
57	Stuart Langley	America needs a new emphasis on cheap clean and safe nuclear energy as represented by 4th generation reactor design like the LFTR and MSR. Cheap clean energy is essential to protect the earth and to protect our own national security. If America wants to lead in the 21st century then creating a path for cheap clean energy for the world is an essential role.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
58	Dennis Brown	To keep America's national interest secure, we should be leading the world in the development of new nuclear technologies. This is for economic considerations and the possibility of another country developing an economically and technologically disruptive technology before America. The strategic plan needs to encourage competition between different nuclear technologies, and we need a regulatory environment that will allow industry to develop this technology in an accelerated time frame.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
59	Keith Workman	Thorium Molten Salt Reactor. It was unwise and irresponsible for DOE to grant, free, no obligation access to technology that belongs to the US citizens as gratis to the Chinese. Their recent tour of Oakridge National Laboratory led to the immediate announcement that they would accelerate their Thorium reactor timetable, cutting it in half !! We were irresponsible in making no effort to negotiate the technology exchange. The single most important priority in any set of national agendas is energy. At the very top of that list is and must be LIFTR MSR. There is simply nothing of higher importance than full scale 'moon landing' class national priority and it must be NOW.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.

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No.	Commenter	Comment <sup>1</sup>	Disposition
60	Alan White	We believe one of the things to be lacking in the mission of the NRC is the lack of competition. It is true that security is mentioned in their mission but we believe that is most often interpreted as meaning military applications, such as powering nuclear submarines and aircraft carriers. The Energy From Thorium Foundation believes that to keep America's national interest secure that we should be leading the world in the development of new nuclear technologies. This is due to economic considerations and the possibility of another country developing and economically and technologically disruptive technology before America. We believe that submissions that help to amend the strategic plan to include competition will help bolster the argument that America needs to be developing a thorium based Molten Salt Reactor and we need a regulatory environment that will allow industry to develop this technology in an accelerated time from (i.e. competitive time frame).	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
61	William Waugh	Please consider the benefits claimed for Liquid Fluoride Thorium Reactor (LFTR) technology	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.

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62	Benjamin Morrison	I believe one of the things to be lacking in the mission of the NRC is the lack of competition. It is true that security is mentioned in their mission but we believe that is most often interpreted as meaning military applications, such as powering nuclear submarines and aircraft carriers. I believe that to keep America's national interest secure that we should be leading the world in the development of new nuclear technologies. This is due to economic considerations and the possibility of another country developing and economically and technologically disruptive technology before America. I believe that submissions that help to amend the strategic plan to include competition will help bolster the argument that America needs to be developing a thorium based Molten Salt Reactor and we need a regulatory environment that will allow industry to develop this technology in an accelerated time from (i.e. competitive time frame).	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.

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No.	Commenter	Comment <sup>1</sup>	Disposition
63	Justin Lukach	<p>I strongly believe nuclear power is our best option for providing clean, reasonably priced power for current and future generations. An abundance of domestically sourced and generated power would benefit the United States economy, safety and environment. It has the potential to provide jobs (not just in power generation but in all the industries that would benefit), food, shelter and so much more. I would like to see a commitment on the scale of the Apollo missions towards continuing research and development of nuclear power. I don't know what the dollar amount should be (10's of billions of dollars over 10+ years at least) but I see no reason a significant portion of that budget should not come from military spending. The benefits our military would accrue from success are far higher than any of the weapons programs currently in development. I would also like to see a small portion of the budget dedicated to education and outreach. The public needs to understand the opportunity, the risks and the details of the proposed solutions. I personally am excited by the potential of a liquid-fluoride thorium reactor (LFTR). But I know there are many other viable candidates as well. Please allow our scientists and engineers to prioritize those projects with the best potential and highest likelihood of success and then implement a multi-year commitment to seeing them to fruition. There is no reason why the United States of America, with the help of our allies, cannot overcome the challenges and see the opportunities of nuclear power realize</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>

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No.	Commenter	Comment <sup>1</sup>	Disposition
64	John Harris	<p>I am an un-affiliated citizen supporter of the Energy From Thorium Foundation's mission, and I concur with everything they have outlined in the following quote:</p> <p>"We believe one of the things to be lacking in the mission of the NRC is the lack of competition. It is true that security is mentioned in their mission but we believe that is most often interpreted as meaning military applications, such as powering nuclear submarines and aircraft carriers. The Energy From Thorium Foundation believes that to keep America's national interest secure that we should be leading the world in the development of new nuclear technologies. This is due to economic considerations and the possibility of another country developing an economically and technologically disruptive technology before America. We believe that submissions that help to amend the strategic plan to include competition will help bolster the argument that America needs to be developing a thorium based Molten Salt Reactor and we need a regulatory environment that will allow industry to develop this technology in an accelerated time frame (i.e. competitive time frame)." I firmly believe that the Liquid Fluoride Thorium Reactor technology is the solution to the current energy crisis. It is the height of irresponsibility that decades after the thorium MSR research performed at Oak Ridge National Laboratories there are still regulatory barriers standing in the way of implementing this technology. *Especially* In light of China's announcement that they are going to build a working thorium molten-salt reactor by 2024.</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>

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No.	Commenter	Comment <sup>1</sup>	Disposition
64	John Haris (continued)	<p><i>(continued from previous page)</i></p> <p>We need to be working on this NOW, not waiting another several decades. As a side benefit, the United States could also break China's stranglehold on the Rare Earth Elements market, since the regulations regarding thorium here in the United States are the primary reason that we don't have a thriving Rare Earth elements mining sector, elements which innumerable modern technological advancements depend upon. Additionally, NASA needs the Pu-238 that is generated as a decay product in a LFTR to power deep space missions, and the medical community needs many of the other decay products for use in nuclear medicine and diagnostics. Finally, most of the "nuclear waste" the USA currently has could once again become fuel for generating electricity. We need regulatory change so that all of these can be possible.</p>	See previous row for comment disposition.
65	Douglass Philips	<p>As a country we need to be investing into LFTRs. This technology of the future is right in front of us for the taking. It is not only depressing but also very disconcerting to read that China is leading the frontier in this technology. If we fall too far behind the pace of other 1st world countries, especially the most powerful ones, we may quickly find our country is no longer a 1st world country. The amazing possibilities for a society and for a culture that is given cheap, abundant and clean energy is simple staggering. What we choose to do as a country right now will forever change and shape the 21st century. It is time to take the next big step into the future, all that is required is for brave men and women to stand up for our children and our children's children. What side of history do you want to be on?</p>	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.

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66	Christopher LeBegue	We believe one of the things to be lacking in the mission of the NRC is the lack of competition. It is true that security is mentioned in their mission but we believe that is most often interpreted as meaning military applications, such as powering nuclear submarines and aircraft carriers. The Energy From Thorium Foundation believes that to keep America's national interest secure that we should be leading the world in the development of new nuclear technologies. This is due to economic considerations and the possibility of another country developing and economically and technologically disruptive technology before America. We believe that submissions that help to amend the strategic plan to include competition will help bolster the argument that America needs to be developing a thorium based Molten Salt Reactor and we need a regulatory environment that will allow industry to develop this technology in an accelerated time from (i.e. competitive time frame	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
67	David Rawlings	America needs to be developing a thorium based Molten Salt Reactor.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.



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68	Joe Schiewe	<p>I believe that is of strategic importance for the United States to develop efficient molten salt nuclear reactors (MSRs) that were first tested back in the 1960's.. The fissioning the easily obtained and inexpensive uranium, thorium and existing nuclear spent waste fuels will be able to provide the power for electricity, seawater desalination, industrial process heat and transportation fuels for at least the next 10,000 years. These thermal reactors are 1) passively safe using the natural laws of physics, 2) emit no GHG during operation, 3) many designs have substantially greater proliferation resistance than current reactors, 4) they are projected to generate tiny amounts of waste (600 lbs/Gigawatt) that 87% are down to natural background levels within 10 years and the remaining 17% in around 300 years, and 5) can do this in areas that don't have a large water mass as a heat sink. Once developed, estimates put the at plant electrical power or industrial heat at about \$0.03/kilowatt while providing family wage jobs at a greater number than the current fossil fuel power generation industry. These jobs and the low cost power can provide the substantial economic boost to the economy to pay down our national debt and allow better future for our kids. Multiple nations are pushing forward in developing these MSRs and the US nuclear regulatory agency should pursue a regulatory process (probably performance based) that will allow these MSR applications to be reviewed and processed as soon as possible.</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>
69	Dave Narby	<p>The US desperately needs to embark on a "Manhattan Project" style crash-engineering program to develop thorium reactors. The US is a pioneer in this area, but we are falling rapidly behind China and India in developing this safer, cleaner, peaceful and abundant form of nuclear energy. Much groundwork has already been laid by the good people here: <a href="http://energyfromt">http://energyfromt</a></p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>

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No.	Commenter	Comment <sup>1</sup>	Disposition
70	Wayne P roctor	Make room in the budget to promote reactors fueled with Thorium. Many problems can be solved including waste disposal. China shouldn't be the only beneficiary for the research America has done on this technology	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
71	Tom Owen	The United States should be leading the way in new nuclear power generation, specifically molten salt reactor technology in the form Liquid Fluoride Thorium Reactors. America should be developing and manufacturing LFTRs. We invented this technology at Oak Ridge National Labratory back in the 60's. It's safe, reliable, sustainable, clean energy. If you're not familiar with these reactors please google LFTR and find out about this amazing machine. I've been an enthusiast of this type of nuclear power since I first read about it in 2011. Shortly after I became aware of LFTRs China released a statement saying that they are going to pursue the development of a molten salt reactor and plan to retain the intellectual property rights of their research and development. I don't know how this will impact the economy in America but I bet it won't be for the better.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.

## Disposition of Public Comments on the Strategic Plan: Fiscal Years 2014-2018<sup>1</sup>

No.	Commenter	Comment <sup>1</sup>	Disposition
72	Carl Hoel	I believe one of the things missing from NRC mission is competition. It is true that security is mentioned in their mission but I believe that is most often interpreted as meaning military applications, such as powering nuclear submarines and aircraft carriers. I believe that to keep America's national interest secure that we should be leading the world in the development of new nuclear technologies. This is due to economic considerations and the possibility of another country developing and economically and technologically disruptive technology before America. I believe America needs to be developing a thorium based Molten Salt Reactor and we need a regulatory environment that will allow industry to develop this technology in an accelerated time frame (i.e. competitive time frame).	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
73	Dale Randall	America needs to be developing a thorium based Molten Salt Reactor. We need a regulatory environment that will allow industry to develop this technology in an accelerated time.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.

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74	Brian Melton	<p>Nations around the world are moving ahead of the world in the development of thorium energy technology, specifically Molten Salt Reactors. This technology needs to be researched and developed for a number of reasons:</p> <ol style="list-style-type: none"> <li>1. It is a vital source of providing energy to our nation while simultaneously reducing the level of carbon emissions being contributed to anthropogenic climate change.</li> <li>2. It is a "clean" technology in that, not only does it not produce any carbon emissions, but also that it holds the potential to recycle nuclear waste...not only the very small amount of waste that a thorium reactor might produce, but also recycle and eliminate the nation's stockpile of nuclear waste from earlier generations of reactors.</li> <li>3. Such technology does not contribute to "nuclear weapons proliferation" as thorium is not easily weaponized.</li> <li>4. Molten Salt Reactors do not have the same degree of risk from coolant failure and/or meltdown that present day reactors in the US have. The degree of safety by using thorium technology is much higher. For these reasons, I urge you to fund a rapid research and development program for Molten Salt Reactors. This will help keep the United States competitive in energy production with the rest of the world. It helps to fulfill our commitment to reducing carbon emission and to fighting climate change. It will be an immediate boost to the economy by providing jobs. And, it will provide the energy to meet the growing demand of a growing population with increasing energy needs.</li> </ol>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>

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75	Chris Cooke	Please consider more development in alternative nuclear technology such as thorium LFTR reactors. Our energy future needs safe and abundant nuclear power.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
76	Anonymous	I would like to see more focus on alternate methods for generating nuclear power besides the standard light water nuclear reactors. More focus and attention should be give to those that are developing Molten Salt Breeder Reactors and the use of Thorium versus Uranium. Furthermore, a closer look should be taken at Thorium and how it should be classified. As a natural existing element within the earth's crust, it should not be classified as a nuclear waste. Doing so now makes it too costly from rare earth miners from extracting the minerals that we can use to restart the United States' manufacturing base.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.

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77	William Pennington	<p>The NRC mission must promote the rapid, cost-effective adoption of safe nuclear energy in the US as a means of reducing CO2 emissions, reducing dependence on limited fossil fuel resources, and providing the country with the lowest energy cost. Low energy costs are essential to enhancing American industrial competitiveness and attracting investments that grow the economy and provide good jobs. In order to promote the rapid, cost-effective adoption of safe nuclear energy the NRC needs to develop a “type-accepted” model of nuclear plant licensing and operations regulation as opposed to the custom project by project approach used today. The NRC should dialog with industry to determine the nuclear plant “types and the priority for their technology assessment licensing development. Small modular reactors would seem to warrant urgent attention because of their quick and flexible deployability and Liquid Fluoride thorium breeding reactors would also seem to warrant early attention due to their low fuel cost, very low proliferation risk, low pressure operation, and simpler safety technology. Type-accepted designs and licensing should dramatically reduce the time, cost, and risk of deploying nuclear energy making the business case for projects much more attractive as well as making commercial financing much more viable. Investment in non-utility industrial energy projects such as desalinization plants, fertilizer production, metals production, etc. would become attractive. Flexible, cost effective nuclear energy production should be a national imperative. In addition the NRC should add to its research portfolio modest funding for research in Low Energy Fusion Reactions so that the US stays competitive in developing an nderstanding of this puzzling but potentially promising nuclear technology</p>	<p>Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.</p>

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78	Ian Nowland	I'd like to see more focus on Molten Salt technologies, especially in conjunction with Thorium. I think this proven technology - as shown at Oak Ridge—could provide much greater safety than the current Nuclear technologies we utilize.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
79	Donald Livingston	NRC must encourage advanced reactor design and development. Molten salt cooled and fueled reactor designs are most likely to be the safest and lowest cost approach to electrical energy security for the United States of America. Consider this in the text of your 2014-2018 Strategic Plan. I am a voting citizen of the USA and residing in Canada.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.
80	Devon Stephens	Please help amend the national security plan to include competition for development of new nuclear technologies. This will help increase nuclear plants that use recycled nuclear waste by burning the left over uranium and plutonium and turning fertile uranium into new fissile plutonium such as INEEL EBRII style reactors (GE S-PRISM). Also, adding competition will allow new forms of energy like thorium based Molten Salt Reactors which breed thorium into fissile uranium.	Comment not accepted. The NRC does not promote nuclear industry nor individual technologies. However, Safety Strategy 1.1-2 covers enhancing the regulatory framework by addressing changes in science, technology, and policies, and Regulatory Effectiveness Strategy 2 covers licensing emerging technologies.