

NRC Draft Artificial Intelligence Strategic Plan Comment Table

Public Meeting, August 3, 2022

| No. | Affiliation | Commenter Name | Comment Reference | Comment/Basis | Recommendation |
|------------|---|-----------------------|--------------------------|--|---|
| 1 | Nuclear Energy Institute (NEI) | James Slider | Strategic Plan | The plan refers to FY'23 to FY'27 as its time window and should be finalized halfway through FY'23. This leaves the rest of that time unaccounted for and it is unclear what will be happening then. | Suggest developing an overview of how the plan will be implemented over the time period, such as how each goal will be pursued over that time. |
| 2 | Virginia Tech National Security Institute (VTNSI) | Tyler Cody | Strategic Plan | The first sentence of this section refers to factors in assessing AI that are possibly properties of the AI itself. From an engineering perspective, what is important to assess is testing and evaluation of the AI to determine these properties and making sure that it works even with different sets of data and not just identically distributed data as well as various possible operating scenarios. Also not included in this section is maintenance of the AI and evaluating its life cycle. | Assess those factors listed by including goals to implement testing and evaluation of the AI and incorporate the idea of managing AI life cycles into the plan. |
| 3 | X-energy | Ian Davis | Strategic Plan | The former section refers to a Community of Practice, but it is unclear whether this is internal or open to the public. The latter refers to pilot and proof of concept programs, and it is also unclear as to whether industry will be engaged with these. | Clarify for both sections about the internal/public status of each part of the plan and highlight areas where industry will be engaged. |
| 4 | Nuclear Safety and Regulatory Research Division, Idaho National Lab (INL) | Vaibhav Yadav | Strategic Plan | There still may be some confusion over industry engagement, especially as tangible goals or a single vision of what form that may take. There seems to be no mechanism yet to facilitate this engagement. | Lay out a more detailed vision of the form industry engagement will take, and a possible framework or mechanism and time this may happen in. |

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| 5 | Defense News | Catherine Buchaniec | Strategic Plan | Safety is a clear priority throughout the plan, but no specific references to partnerships or cooperation with national security organizations within the government on this issue seem to be present. | Give specific examples of already existing partnerships and cooperation within the federal government on the issue of AI safety and risk management, and what may follow in the future. |
| 6 | Private citizen (formerly Naval Nuclear Propulsion Program, particle board plant) | Dan Solitz | Strategic Plan | Is one example of the use of AI calculating rod worth and fuel depletion to automate some reactor functions? | Give specific examples of use cases. |
| 7 | NEI | James Slider | Strategic Plan | There seems to be one implied criterion for distinguishing between the four levels of AI listed, when there could be a more complex and fleshed out standard for determining the level of AI, and it is unclear how exactly each level will be treated differently by the NRC. | Improve upon the criteria that distinguish each of the four levels of AI listed and be clear on what regulatory differences exist between the four different levels. |
| 8 | NEI | James Slider | Presentation | What are the disciplines other than AI that are required for the success of this team? | Clarify that the success of the AI team depends on the cooperation of individuals with many different disciplines. |
| 9 | VTNSI | Tyler Cody | Strategic Plan | The systems engineering community is researching and developing digital methods and engineering practices to address the creation and implementation of AI tools. | Include engagement with the systems engineering community on goals 2 and 3. |

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| 10 | Curtiss-Wright Scientech | Marty Murphy | Presentation | The plan seems to lack mention of inspection procedures for the new positions that will develop out of the AI field, especially with uses of AI that may not fall under NRC regulation. | Clarify the role of the NRC in inspecting uses of AI and what it will not be inspecting, and how it will adapt to changes from the incorporation of AI. |
| 11 | Westinghouse | Brian Golchert | Strategic Plan | There is concern that there is no recourse for regulatory burdens that could lead to the abandonment of AI technology due to restrictions from the NRC. | Provide whether the industry will be engaged when regulations are developed so that it may have a say in whether such regulations are feasible to implement. |
| 12 | NEI | James Slider | Strategic Plan | Regulations developed must ensure safety, but a priority not mentioned in the plan is to also facilitate the use of AI still and not stifle it. | Include industry engagement in regulation creation to ensure viability. |
| 13 | NEI | James Slider | Strategic Plan | The lack of timeline for the implementation of this plan also means that it is unclear how soon regulations will begin to be developed by the NRC, which means many in the industry are holding back on development to await guidance. | Make the development of regulations a near-term goal so that the industry can be engaged and begin developing their AI tools safely and within NRC regulations. |
| 14 | NuclearN.ai | Bradley Fox | Strategic Plan | The strategic plan makes use of the term could impact. This leaves room for interpretation and is unclear for the engineer and industry. There is also little insight as to how software quality assurance (SQA) may be impacted by AI. | Remove the word “could” and be more specific in the guidance of the plan so that there is little interpretation and miscommunication. Also detail the role of SQA and how it will need to adapt to the introduction of AI. |

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| 15 | Oklo | Ross Moore | Strategic Plan | The fourth level of the table seems to blend automation and AI, with little distinction between the two concepts, which is confusing given the existing NRC regulation of automation. | Clarify the distinction between automation and AI so that it is more obvious what constitutes AI for the NRC in this plan. |
| 16 | NEI | James Slider | Strategic Plan | Mention is made of cooperation with other federal agencies that have experience with AI, but it is unclear what agencies those may be or whether their policies will be adopted by the NRC. | Provide the names of agencies that have experience with AI and will be engaged by the NRC while creating new regulations and details of whether their policies may be incorporated into NRC policy. |
| 17 | VTNSI | Tyler Cody | Presentation | The table does not include and criteria regarding how AI implementations may be affected by future changes in data input and operating conditions, or how it will adapt to changes such as in the physical system. | Include adaptability of the AI – how effective it is expected to be in the future when changes in operation take place – in the criteria for defining levels, and include how analysis will work, such as reconciling changes in the physical system with the AI. |
| 18 | X-energy | Ian Davis | Presentation | There may be a trend toward removing the operator from operator induced events in the future, which would entail an evaluation of whether an AI or human operator is more trustworthy, and how trustworthy the AI must be for implementation. | Develop a mechanism to determine the trustworthiness of AI versus a human for achieving operating conditions. |
| 19 | Westinghouse | Brian Golchert | Strategic Plan | Some industry members may use AI to help design a product, but traditional non-AI methods to test and evaluate it, and it is unclear whether the AI would still need to be regulated in this case as it is only a behind-the-scenes tool. | Clarify whether all AI is covered by this plan, such as in the case provided, or if there are some behind-the-scenes functions of it (such as design backed up by human review) that do not need regulation. |

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| 20 | INL | Vaibhav Yadav | Strategic Plan | Was there thought given to the intersection with existing regulation such as Part 53? | Include details of whether existing regulation will be incorporated into the plan, and if so, how this will happen. |
| 21 | NEI | James Slider | Strategic Plan | Comments on this draft are due 8/19, and there will be an ACRS meeting in November. Other than that, what are the plans for public announcement/engagement that will take place before it is finalized? | Clarify near-term goals and public engagement/communication that will take place. |
| 22 | INL | Jason Remer | Strategic Plan | Prior to the shift over to AI, there was a shift from analog to digital for operations in plants, with many lessons learned that could be used now. | Include how experience from the transition from analog to digital that some employees may have could be leveraged in transitioning to AI. |