

Enclosure 2

**Table 1: Revision 1 AMT Action Plan Tasks, Deliverables and Schedule**

| Task <sup>1</sup>        | Subtask                              | Lead      | Actions/Deliverables <sup>2</sup>  | Schedule Completion <sup>3</sup>  | Related Task in Initial AP |
|--------------------------|--------------------------------------|-----------|--|---|----------------------------|
| 1 Technical Preparedness | 1A AMT processes under consideration | RES / NRR | <p><b>Develop TLRs on the essential safety differences between the proposed initial AMT and traditional manufacturing and the aspects of the technology not addressed by codes, standards and regulations.</b> Schedule reflects dates for transmission of each TLR from RES to NRR. TLRs will be publicly available.</p> <p>Additive Manufacturing (AM) – Laser Powder Bed Fusion</p> <p>Powder Metallurgy (PM) – Hot Isostatic Pressing (HIP)</p> <p>Electron Beam (EB) welding</p> <p>Cold Spray</p> <p>AM – Directed Energy Deposition (DED)</p> | <p>Draft Sept. 2020;<br/>Final Nov. 2020</p> <p>Draft Sept. 2021;<br/>Final Nov. 2021</p> <p>Draft Sept. 2021;<br/>Final Nov. 2021</p> <p>Draft Nov. 2020;<br/>Final Feb. 2021</p> <p>Draft May 2021;<br/>Final July 2021</p> | Continuation of Task 1.5   |
|                          | 1B Inspection and NDE                | RES       | TLR documenting the assessment of technologies for testing and examining AMT-fabricated components, advantages/disadvantages of each, and limitations. Schedule reflects dates for transmission of each TLR from RES to NRR. TLRs will be publicly available.  | November 2020   | N/A – new task             |

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|---------------------------|---|------|--|---|----------------------------|
|                           | 1C Modeling and Simulation of Microstructure and Properties | RES  | <p>TLR documenting recommended microstructural analysis information needed for potential AMT applications. Addresses the initial AMTs identified by NRC and identifies any potential significant technical and regulatory implications. Schedule reflects dates for transmission of each TLR from RES to NRR. TLRs will be publicly available.</p> <p>TLR summarizing the current state of modeling and simulation tools for predicting the material properties in nuclear components assembled using AMTs. Includes gap analysis and review of computational tools and capabilities. Schedule reflects dates for transmission of each TLR from RES to NRR. TLRs will be publicly available.</p> | <p>December 2020</p> <p>December 2020</p> | N/A – new task             |
| 2 Regulatory Preparedness | 2A Implementation using the 50.59 process                   | NRR  | <b>Finalize document incorporating feedback from Regional staff regarding the 10 CFR 50.59 process.</b> The document will be ready for concurrence May 2020. Review by OGC and public comment period will be completed prior to making the document publicly available.  | May 2020                                  | Follow-on to Task 1.6      |
|                           | 2B Assessment of regulatory guidance                        | NRR  | <b>E-mail communication to Division Directors recommending a path forward on guidance development or modification</b>  | May 2020                                  | Continuation of Task 3     |

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|---|--------------------------|-----------|---|---|--|
|   | 2C AMT Guidance Document | NRR / RES | <p><b>Public meeting on guidance concept / framework</b></p> <p><b>Develop a document that describes the generic technical information to be addressed in AMT submittals.</b> The document should include specifics regarding the information contained in a technical data package for NRC submittal. The document will be ready for concurrence November 2020. Target for being publicly available March 2021 after anticipated OGC review and public comment period.</p> <p>Public meeting to discuss draft document</p>   | <p>July 2020</p> <p>Draft: August 2020</p> <p>Begin concurrence November 2020</p> <p>September 2020</p>   | Continuation of Task 2.7   |
| 3 Communications and Knowledge Management | 3A Internal Interactions | RES / NRR | Quarterly meetings with internal POCs to ensure continued internal coordination   | Ongoing quarterly meetings  | Continuation of Task 2.6   |
|   | 3B External Interactions | RES / NRR | <p>Continued external communication with vendors, licensees and EPRI for future AMTs. Continued Information gathering for future AMTs: site visits, contractor support, public meetings, training. Document summary of the communications including conclusions regarding relevance and significance to nuclear applications and regulatory implications.</p> <p>Continued interaction in Codes and Standards. Document summary of the communications including conclusions regarding relevance and significance to nuclear applications and regulatory implications.</p> <p>The external interaction plan is a non-publicly available document that will be updated regularly with dates and POCs.</p> | <p>Ongoing, summary documents within 2 weeks of communication</p> <p>Ongoing, summary documents within 3 weeks of the meeting</p> <p>March 2020, and as needed thereafter</p> | <p>Continuation of Task 2.2 and 2.4</p> <p>Continuation of Task 2.5</p> <p>Follow-on to Task 2.1</p> |
|   |                          |           |   |   |  |

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|-------------------|------------------------------------|-----------|--|-------------------------------------|----------------------------|
|                   | 3C Knowledge Management Plan       | RES / NRR | <b>Develop Knowledge Management Plan.</b><br>The KM Plan is a non-publicly available document that will be updated as needed.        | Draft April 2020<br>Final June 2020 | Continuation of Task 4     |
|                   | 3D Public Workshop                 | RES / NRR | <b>Hold Public Workshop.</b> After the workshop, presentations will be documented in a publicly available NUREG/CP report.           | Tentatively by December 2020        | N/A – new task             |
|                   | 3E AMT Material Information course | RES / NRR | Training course and course materials<br>Course material will be for staff only (non-public), available through ADAMS and SharePoint. | November 2020                       | N/A - new task             |

<sup>1</sup> Some tasks rely on information from external organizations for completion. Staff have to make assumptions to provide deliverables as per the schedule indicated if this external information is not received.

<sup>2</sup> The bold items represent the major deliverables identified in the action plan

<sup>3</sup> This action plan will be revisited and revised periodically, likely in about 9-12 months