Tracking Number	Proposal Title	PI	Initiative
18A12-020FP	Real Time Transient Heating Measurements for Advanced Experiment Design and Model Validation	Woolstenhulme, Nicolas E	ANE: Transient Testing 1.1.3.4
18A12-076FP	Novel Methods to Produce an Argon-37 Standard	Cardenas, Edna S	CIP: Investigative Technologies for Nonproliferation and Nuclear Forensics 3.1.3.1
18A12-105FP	Advanced manufacturing for novel nuclear fuel and structural components	Jerred, Nathan D	ANE: Advanced Manufacturing 1.1.3.1
18A12-116FP	Boron Suboxide & Refractory Transition Metal Boride Fabrication by Spark Plasma Sintering	Kane, Joshua J	CIP: Armored Protection Against Blast and Ballistic Threats 3.1.4.1
18A12-212FP	High Performance Computing-based Dynamically Adaptive Protection Schemes for Electric Grid	Alam, S M Shafiul	CED: Advanced Energy Integration 2.1.2
18A40-014FP	Accelerating irradiated fuel studies by advanced surrogate samples	Di Lemma, Fidelma Giulia	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
18P37-001FP	In-Pile Investigation of Transient Boiling in the Transient Reactor Test (TREAT) Facility	Jensen, Colby B	ANE: Transient Testing 1.1.3.4
18P37-007FP	Neutron Diffraction of Irradiated Nuclear Fuel	Tan, Chuting	ANE: Nuclear Experimental Capabilities 1.1.3.3
18P37-008FP	Development of new experimental capability based on Focused Ion Beam (FIB) micromachining and investigation of thermo-physical properties of nuclear materials at micro and mesoscale	Gofryk, Krzysztof	ANE: Nuclear Experimental Capabilities 1.1.3.3
18P37-030FP	Intelligent Additive Manufacturing	Abboud, Alexander W	CED: Advanced Manufacturing 2.1.3
18P37-031FP	Expanding photo-nuclear data via high-energy linear accelerator (LINAC) coupled with real time gaseous mass separation	Carney, Kevin P	ANE: Integrated Nuclear Fuel Cycle Technologies and Solutions (1.4)
18P37-033FP	Robust Insulation for Resilient Transformers against a Electromagnetic Pulse or Geomagnetic Disturbance	Vaagensmith, Bjorn C	CIP: Secure and Resilient National Power Grid 3.1.2.2
19A39-012FP	Accelerated Nuclear Materials and Fuel Qualification by Adopting a First to Failure Approach	Kwon, Seongtae	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
19A39-020FP	Liquid Scintillation Alpha Spectrometry for Nuclear Nonproliferation and Nuclear Forensics	Chichester, David L	ANE: Integrated Nuclear Fuel Cycle Technologies and Solutions (1.4)
19A39-023FP	An Innovative Secure millimeter wave (mmWave) Machine to Machine (M2M) Communication Network for Operating Drones	Bhuyan, Arupjyoti	CIC: Advanced Technologies for Critical Infrastructure Protection (4.1.1)

19A39-024FP	Developing Multi-Scale, Rapid and Comprehensive Post-Irradiation Examination using the Focused Ion Beam Microscope	Murray, Daniel J	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
19A39-029FP	Seismic and Cost Assessment of Deeply Embedded or Buried Advanced Rectors with Seismic Isolation Strategies	Kurt, Efe G	ANE: Transformational Nuclear Systems Technologies (1.1)
19A39-059FP	Dissolution Phenomena of Used Nuclear Oxide Fuel in Molten Salt Systems	Herrmann, Steven D	ANE: Integrated Nuclear Fuel Cycle Technologies and Solutions (1.4)
19A39-061FP	Determining the role of fission gas bubble pressure in fuel fragmentation during off-normal conditions: A separate effect study.	Cappia, Fabiola	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
19A39-070FP	Moving beyond Displacements Per Atom: A new approach for rapidly quantifying radiation damage	Middlemas, Scott C	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
19A39-071FP	Mitigating irradiation assisted stress corrosion cracking by rapid alloy design	Schwen, Daniel	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
19A39-100FP	Constituent Redistribution in Nuclear Fuels	Benson, Michael T	ANE: Integrated Nuclear Fuel Cycle Technologies and Solutions (1.4)
19A39-103FP	Archiving Experimental Breeder Reactor-II Metallic Fuel Test Data Using the Nuclear Energy Advanced Modeling and Simulation (NDMAS) Program to Accelerate Fast Reactor Fuel Qualification	Porter, Douglas L	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
19A39-130FP	Three-Dimensional Electrochemical Manufacturing and Sensing (3DEMS)	Jiang, Junhua	ADM: Design and Manufacture of Nuclear Reactor Components (3.1)
19A39-137FP	Orthogonal Frequency-division Multiplexing-Compatible Underlay Communication Channel for Massive Machine-type Communications (mMTC) in fifth generation (5G) and Beyond	Majid, Arslan J	CIC: Improved Connectivity through Wireless Communications (4.1.4)
19A39-146FP	Design and Evaluation of a Nuclear Pumped Laser Detector for Reactor Power Indication	Beasley, A Andy	ADM: Advanced and embedded sensors (3.3)
19A39-185FP	Fundamental Liquid/Porous-Solid Interactions in High-Solids Slurry Processing	Williams, Luke	AIES: Interfacial Domain Interactions and Characterization for Advanced Energy Materials (2.2.3)
19A41-025FP	Light Element Analysis of Nuclear Fuels by Electron Probe Microanalysis (EPMA)	Wright, Karen E	ANE: Transformational Approaches to Accelerate RDD&D (1.2)

19P43-007FP	Optical Fiber-based Fabry-Perot Interferometry for Fission Gas Detection	Fleming, Austin D	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
19P43-009FP	Evaluating thermal properties of advanced materials	Pavlov, Tsvetoslav R	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
19P43-012FP	Probing Microstructure-induced Swelling and Thermal Property Changes in Ion-irradiated Oxide Fuels using Laser-generated Surface Acoustic Waves	Khanolkar, Amey Rajendra	ANE: Integrated Nuclear Fuel Cycle Technologies and Solutions (1.4)
19P43-013FP	Electronic and thermodynamic properties of selected uranium compounds at high magnetic fields	Ding, Xiaxin	ANE: Integrated Nuclear Fuel Cycle Technologies and Solutions (1.4)
19P45-013FP	Intensified characterization and analysis of energy storage system to support integrated energy systems	Liaw, Boryann	AIES: Data-driver Decisions for Electrical Energy Integration (2.2.1)
19P45-020FP	Risk and Resilience Assessment of Cyberattacks on Electric Grids: Informing Risk Characterization using Dynamic Probabilistic Risk Assessment	Le Blanc, Katya L	Develop Critical N&HS Capabilities: Cybercore (4.1)
19P45-028FP	Production of Scandium-47 for Potential Use as a Radiotheragnostic	Snow, Mathew S	ANE: Integrated Nuclear Fuel Cycle Technologies and Solutions (1.4)
19P45-031FP	Coupling of Spark Plasma Sintering with Advanced Modeling to Enable Process Scale-Up	Pitts, Stephanie A	ADM: Innovative M&S of Materials under Extreme Environments (3.2)
20A1047-015FP	Transient Spectrokinetic Reactor to Accelerate Development of Advanced Manufacturing Materials	Fushimi, Rebecca R	ADM: Innovative M&S of Materials under Extreme Environments (3.2)
20A1047-018FP	Innovative Materials and Coatings for Sweep Gas Membrane Distillation to Separate Bioethanol from Fermentation Broth	Adhikari, Birendra	AIES: Innovative Ways to Produce Commodity Feedstocks and Chemicals (2.2.1)
20A1047-025FP	Microalgae for Selective Concentration of Rare Earth Elements from Bioleachate Solutions	Wahlen, Bradley D	AIES: Innovative Ways to Produce Commodity Feedstocks and Chemicals (2.2.1)
20A1047-029FP	Proton Recoil Effect on Light Output in Fast Neutron Scintillators	Chuirazzi, William C	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
20A1047-038FP	Smart Contingency Analysis Neural Network for in-depth Power Grid Vulnerability Analyses	Vaagensmith, Bjorn C	Develop Critical N&HS Capabilities: Electric Grid and Energy Infrastructure Protection (4.2)
20A1047-039FP	Proof of Principle Experiments for a Pyrochemical Approach to Treatment of Used Advanced Test Reactor Fuel	Herrmann, Steven D	ANE: Integrated Nuclear Fuel Cycle Technologies and Solutions (1.4)

20A1049-002FP	Conception of an Enhanced Fast Neutron Test Capability in a Thermal Spectrum Reactor	Woolstenhulme, Nicolas E	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
20A1049-007FP	Macromolecule Radiolysis Using Radical Precursors	Hodges, Brittany D	AIES: Energy to Molecules and Materials (2.2)
20A1049-008FP	Sensitive Methods for Organoiodide Speciation	Zarzana, Christopher A	ANE: Integrated Nuclear Fuel Cycle Technologies and Solutions (1.4)
20A1049-012FP	Multiscale thermal properties prediction in the Multiphysics Object Oriented Simulation Environment (MOOSE) via a general Boltzmann solver	Harter, Jackson R	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
20A1049-015FP	Using Coupled Multiphysics Tools to Investigate Design-limiting Criteria for Molten Salt Reactors	Schunert, Sebastian	ANE: Transformational Nuclear Systems Technologies (1.1)
20A1049-016FP	Fast, high resolution autoradiographic imaging of localized, small fission product containing samples for nuclear quality assurance, radiological emergency response, and nuclear forensics	Foley, Ariana A	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
20A1049-029FP	Solid State Chlorination of Waste Lithium Battery Scrap	Diaz Aldana, Luis A	AIES: Innovative Ways to Produce Commodity Feedstocks and Chemicals (2.2.1)
20A1052-018FP	Ion-Solid Interactions in Focused Ion Beam/Secondary Ion Mass Spectrometry: Toward Nanoscale Trace Element and Isotopic Distribution Analysis in Irradiated Materials	Murray, Daniel J	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
20A1052-022FP	Heat Source Identification Using Inverse Optimization	Munday, Lynn Brendon	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
20A1052-025FP	Development of an Innovative Testing Framework to Assess Crack Initiation Assisted by Corrosion-Fatigue	Kombaiah, Boopathy	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
20A1052-027FP	Coordinated Examination of Microstructure and Thermal Properties of Gamma Uranium-zirconium Alloy in Volumetric Space	Adkins, Cynthia A	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
20A1052-028FP	Improving Cryptographic Algorithm Resistance to Side Channel Attack	Erbes, Robert J	Develop Critical N&HS Capabilities (4.0)
20A1052-030FP	Ultrasonic fatigue lifetime measurements: A first step to developing a mechanistic understanding	Hua, Zilong	ADM: Multi-role and Integrated Materials Systems (3.3)
20A1054-008FP	Support Vector Analysis for Computational Risk Assessment, Decision-Making, and Vulnerability Discovery in Complex Systems	Gribok, Andrei V	Nuclear Reactor Sustainment and Expanded Deployment: Transformational Approaches to Accelerate Nuclear RD&D

20A1054-012FP	Automated Dependency Graph Partitioning in Multiphysics Object-Oriented Simulation Environment (MOOSE) framework	Carlsen, Robert W	Nuclear Reactor Sustainment and Expanded Deployment: Transformational Approaches to Accelerate Nuclear RD&D
20A1054-014FP	SPectral Observation Convolutional neural networK (SPOCK)	Fronk, Ryan G	Nuclear Reactor Sustainment and Expanded Deployment: Transformational Approaches to Accelerate Nuclear RD&D
20A1054-017FP	Assessment of neutron irradiation tolerance of semi-coherent nano-lamellar structures	Sun, Cheng	Nuclear Reactor Sustainment and Expanded Deployment: Transformational Nuclear Systems Technologies
20A1054-019FP	Scalable domain decomposition algorithms for large scale Monte Carlo neutron transport simulations on unstructured mesh	Giudicelli, Guillaume Louis	Nuclear Reactor Sustainment and Expanded Deployment: Transformational Approaches to Accelerate Nuclear RD&D
20A44-025FP	Infrastructure eXpression	Foster, Rita A	Develop Critical N&HS Capabilities: Electric Grid and Energy Infrastructure Protection (4.2)
20A44-040FP	Switchable Solvent Water Extraction and Water Softening	Wilson, Aaron D	AIES: Innovative Ways to Produce Commodity Feedstocks and Chemicals (2.2.1)
20A44-050FP	A New Approach to Cathode Interface Structure/Activity with Transient Kinetics	Fang, Zongtang	AIES: Innovative Ways to Manage, Store, and Utilize Energy (2.2.2)
20A44-058FP	Secure mmWave Spectrum Sharing with Autonomous Beam Scheduling	Bhuyan, Arupjyoti	Develop Critical N&HS Capabilities: Improved Connectivity through Wireless Communications (4.3)
20A44-108FP	Automated Type and Data Structure Resolution	Verba, Jared A	Develop Critical N&HS Capabilities: Reverse Engineering at Scale (4.1.2)
20A44-153FP	Development of a Streamlined Approach for Burnup and Microstructural Analysis of Nuclear Materials from Nanoscale to Mesoscale	Bachhav, Mukesh	ANE: Transformational Approaches to Accelerate RDD&D (1.2)
20A44-203FP	Improving the Stability and Durability of Aptamer Based Smart-Materials Using Extremophiles.	Vega Montoto, Lorenzo J	AIES: Energy to Molecules and Materials (2.2)
20P1048-001FP	Probing in situ multi-property evolution during material processing using laser photoacoustics	Dennett, Cody Andrew	Advanced Materials & Manufacturing for Extreme Environments: Innovative Design, M&S of Materials under Extreme Conditions
20P1048-005FP	Development of a Simple Single Step Ultra Chemical Purification of Neptunium	Lecrivain, Thibaut Jean Michel Lucien	Integrated Fuel Cycle Solutions

21A1055-016FP	Application of the Associated Particle Technique to Fieldable Prompt Gamma-Ray Neutron Activation Analysis Systems	Bucher, Brian M	Secure and Resilient Cyber-physical Systems: Holistic Approaches to Critical Infrastructure Resilience Challenges
21A1057-006FP	Reactor core isolation cooling system model development and implementation in the Reactor Excursion and Leak Analysis Program (RELAP-7)	Cavaluzzi, Jack M	Nuclear Reactor Sustainment and Expanded Deployment: Transformational Nuclear Systems Technologies
21P1063-001FP	Closed-form Solution for the Movement of Hydrogen in Nuclear Thermal Propulsion Reactor Fuels during Transient Operation	Johnson, Stephen G	Nuclear Reactor Sustainment and Expanded Deployment: Transformational Nuclear Systems Technologies