

ACCOMPLISHMENTS AND HIGHLIGHTS 2020–2021

COVID-19

In March 2020, the NRC formed a task force to lead a coordinated agencywide response to the COVID-19 pandemic. The primary goals were to maintain the agency's important safety and security mission while also protecting employees and mitigating the spread of the virus at NRC worksites. By April 2020, approximately 98 percent of the agency workforce, including its inspectors, were successfully working remotely.

The task force oversaw the implementation of Federal requirements in response to the pandemic; engaged with other Federal agencies on their COVID response; developed agencywide guidance and protocols; and communicated on related NRC activities with internal and external stakeholders through virtual meetings, collaboration tools, social media, and dedicated internal and external Web pages.

Key NRC actions related to COVID-19 include the following:

- *Developing COVID-19 guidance for nuclear power plant licensees and nuclear materials licensees*
- *Communicating regularly with nuclear facilities to discuss current activities and future plans, including staffing, reactor operator licensing, reductions in nonessential maintenance, fire brigade staff requirements, and other matters*
- *Providing the nuclear industry with information to facilitate the expedited review of requests for temporary exemptions, such as to work-hour limits, to allow flexibility in maintaining an appropriate workforce to meet the NRC's minimum reactor operator and security staffing requirements*
- *Deferring licensee invoicing for annual fees (10 CFR Part 171) and user fees (10 CFR Part 170) normally due in the third quarter of Fiscal Year (FY) 2020*
- *Informing licensees how to request extensions to requirements to account for special nuclear materials and request temporary relief from some agency requirements while maintaining safety*
- *Providing information to NRC licensees to facilitate expedited review of requests for temporary exemptions from some biennial emergency preparedness exercise requirements*
- *Completing "full implementation" inspections and engaging stakeholders during development of a draft baseline cyber inspection procedure that will be used in CY 2022.*
- *Approving more than 250 licensing actions seeking temporary flexibilities to maintain the safe and secure operation of reactor licensees during the pandemic*
- *Issuing general enforcement guidance on how the agency will examine potential violations of NRC regulations related to COVID-19*
- *Adjusting inspection plans and schedules to safeguard the health and safety of NRC and licensee staff while effectively implementing the Reactor Oversight Program*
- *Adjusting security and emergency preparedness inspections schedules related to COVID-19*
- *Performing a lessons-learned and best practices review, resulting in recommendations to address information technology and changes to remote oversight when site access may be restricted*
- *Extending public comment deadlines to afford additional opportunities for public involvement during the pandemic*
- *Creating a new NRC eLearning initiative to help parents with children attending school virtually and for adults who want to know more about science, nuclear technology, and the NRC*

Power Reactors

- *Completed more than 1,350 licensing actions and other licensing tasks that support operating, new, and advanced reactors, including numerous actions related to the adoption of risk-informed initiatives, topical reports, and the safe transition of operating plants to decommissioning*
- *Provided a revision of NUREG-1409, “Backfitting Guidelines,” to the Commission*
- *Issued a memorandum to the Commission describing the status of the NRC’s review of construction tests and analysis, inspection, and licensing activities for Vogtle Unit 3*
- *Continued preparation for the end of Vogtle construction by risk-informing the baseline inspection program for AP1000 reactors and finalizing plans to transition Vogtle Units 3 and 4 from construction to the operating reactor oversight process*
- *Rolled out a new Web-based portal for licensee submission of proposed alternatives to codes and standards per 10 CFR 50.55a(z)*
- *Provided to the Commission several rulemakings such as the ABWR design certification (DC) renewal, NuScale small modular reactor DC, AP1000 DC extension*
- *Completed several key activities related to accident tolerant fuel (ATF) including issuance of a report by Energy Research, Inc. that covers the performance of the reactor during severe accidents for the current ATF concepts, higher burnup fuel, and fuel with enrichment above five weight percent; redesigning the ATF public Web site; and hosting two large workshops on licensing of higher burnup and increased enrichment fuel*
- *Granted subsequent license renewals for Surry Units 1 and 2, authorizing reactor operation from 60 to 80 years*
- *Accepted for review two subsequent license renewal applications for North Anna Units 1 and 2 and Point Beach Units 1 and 2*
- *Accepted for review the first digital instrumentation and control (DI&C) pilot application for Waterford using the new DI&C licensing process providing for an earlier licensing decision on the safety of the design*
- *Issued a revision to staff guidance regarding the evaluation of defense-in-depth and diversity to address a potential common-cause failure in digital safety systems*
- *Published technology-inclusive guidance for use by the NRC staff in reviewing the instrumentation and controls portions of non-light-water reactor applications*
- *Developed preliminary proposed rule language and held multiple public workshops regarding the safety and security requirements for the 10 CFR Part 53, “Licensing and regulation of advanced nuclear reactors,” rulemaking on a risk-informed, technology-inclusive regulatory framework for advanced reactors, with a publication target of October 2024*
- *Completed reviews of several topical reports and continued various other preapplication engagement activities with reactor vendors and applicants, including those selected by the Department of Energy, to construct and operate advanced nuclear power reactors under the Advanced Reactor Demonstration Program*
- *Issued several guidance and policy documents to support future licensing of advanced reactors on topics such as fuel qualification methodology; policy, licensing, and environmental considerations associated with micro-reactors; and instrumentation and controls systems*
- *Finalized guidance on a risk-informed process for evaluations to establish a more efficient means to review licensing actions that address issues of low safety significance within the licensing basis*
- *Issued revised guidance to enhance regulatory efficiencies by enabling licensee peer review of newly developed methods for use in probabilistic risk assessments*
- *Completed reviews on all seismic probabilistic risk assessments and external flooding submittals in response to the agency’s post-Fukushima actions resulting in safety enhancements and an improved ability to cope with the reevaluated hazards*

- *Approved multiple applications for the adoption of advanced risk management programs (such as 15 Risk-Informed Completion Times applications and the last National Fire Protection Agency 805 application)*
- *Completed 99 percent of calendar year 2020 required inspection and assessment activities of the Reactor Oversight Process, despite significant challenges due to COVID-19*
- *Issued a new Inspection Manual chapter to assist staff in reviewing licensee evaluations of changes to facility design, procedures, tests, or experiments in instances where a license amendment is not required to make the change*
- *Developed and began implementing an operating experience dashboard to provide staff with centralized access to information and ability to view, search, and use relevant operating experience data and trends*
- *Implemented various data analysis initiatives to enhance and modernize new and operating reactor workload and financial management across multiple business lines*
- *Prepared a rulemaking plan to update and transform the NRC's environmental review process*
- *Published an Advance Notice of Proposed Rulemaking for Alternatives to the Use of Credit Ratings*
- *Issued Interim Staff Guidance, "Micro-Reactor Applications, COL-ISG-029, Environmental Considerations Associated with Micro-Reactors"*
- *Published proposed rule for the NuScale small modular reactor DC*
- *Issued orders approving the transfers of Indian Point Units 1, 2, and 3 and Three Mile Island Unit 2 licenses for the purpose of decommissioning*
- *Provided technical expertise to the U.S. Navy for decommissioning of the Surface Ship Support Barge under an interagency agreement*
- *Completed 61 force-on-force inspections, testing licensees' abilities to protect against the Design Basis Threat during the COVID-19 public health emergency*
- *Reviewed and accepted three industry-proposed revisions to current cybersecurity guidance to enhance the identification and protection of the critical digital assets associated with the safety-related and emergency preparedness functions*
- *Conducted 154 baseline security inspections at operating power reactors and Category I fuel cycle facilities*
- *Issued Revision 6 of Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," which describes and endorses acceptable methods for implementing the emergency preparedness regulations*
- *Issued Revision 1 of NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimate Studies," resulting in significant enhancements for use by licensees when analyzing 2020 decennial census data*
- *Continued to synchronize physical security inspections of Vogtle Units 1 and 2 with Unit 3, improving efficiency in the oversight program*
- *Signed a memorandum of understanding with Cooper Nuclear Station to participate in the RAPBack Program, which allows both parties to receive notification of activity on individuals who hold positions of trust or who are under criminal justice supervision or investigation*

Nonpower Reactors

- *Granted SHINE Medical Technologies, LLC, an exemption that provides flexibility to procure facility-specific and other components for the construction of the SHINE medical isotope production facility*

Nuclear Materials and Waste

- *Completed approximately 1,400 radioactive materials licensing actions*
- *Transitioned inspection activities, Integrated Materials Performance Evaluation Program (IMPEP) activities, and public meetings to a remote environment in response to the COVID-19 pandemic to minimize impact to the agency's oversight programs and stakeholder engagement*
- *Completed six IMPEP reviews, including the first consolidated IMPEP of NRC licensing and oversight programs*
- *Issued a revision to Management Directive 5.1, "Consultation and Coordination with Governments and Indian Tribes," in July 2020 to ensure that written communications are provided to Federally recognized Indian Tribes for providing input on NRC regulatory actions after the agency's final decision*
- *Completed the revisions of 13 State Agreement procedures to implement the revised Management Directive 5.6, "Integrated Materials Performance Evaluation Program"*
- *Issued revisions to five State Agreement and State Liaison procedures to support NRC Agreement States and enhance joint oversight of the National Materials Program*
- *Issued a technical evaluation report for Exubriion Therapeutics' proposed license application template for the use by the NRC and Agreement States' applicants and licensees for use of a tin-117m colloid to treat osteoarthritis in large dogs*
- *Issued five Approved Spent Fuel Storage Casks Certificates of Compliance*
- *Issued Centrus Energy Corp./American Centrifuge Operating's license amendment for the High-Assay Low-Enriched Uranium Demonstration Program*
- *Issued reports for the fuel cycle smarter inspection program and the independent spent fuel storage installation (ISFSI) oversight enhancement initiatives to ensure safety as well as provide for a comprehensive and consistent inspection program*
- *Issued NUREG-2224, "Dry Storage and Transportation of High Burnup Spent Nuclear Fuel," which includes approaches for enhancing the effectiveness and efficiency of licensing and certification of high burnup spent nuclear fuel in transportation and dry storage*
- *Endorsed the "ISFSI License and Cask CoC Format Content, and Selection Criteria" document to improve the dry storage licensing process by applying risk insights to clarify the information required in certificates of compliance and technical specifications and removing or relocating details that are not risk significant*
- *Renewed the license for the Honeywell International uranium conversion plant in Metropolis, IL, after concluding that renewing the license will not pose an undue risk to public health and safety and will not significantly affect the quality of the environment*
- *Renewed the license for the Humboldt Bay ISFSI for an additional 40 years; the renewed license includes implementation of an aging management program to ensure that important-to-safety structures, systems, and components will continue to perform their intended functions during the extended storage period authorized by the renewal*
- *Terminated the materials license for the General Atomics facility in San Diego, CA*
- *Submitted a report to Congress identifying best practices for establishing and operating local community decommissioning advisory boards, as required by the Nuclear Energy Innovation and Modernization Act*
- *Signed a memorandum of understanding with the Environmental Protection Agency to improve coordination and cooperation in the regulation of the in situ recovery process of uranium extraction*

- Used pre-recorded radio broadcasts both in English and the Navajo Diné language to communicate on NRC activities during the public comment period for the United Nuclear Corporation Church Rock Project Draft Environmental Impact Statement
- Issued a license on Sept. 13 to Interim Storage Partners LLC to construct and operate a consolidated interim storage facility for spent nuclear fuel in Andrews, Texas.

Agencywide

- Continued to oversee the safe and secure operation of nuclear power plants and fuel cycle facilities, as well as the possession and use of radioactive materials
- Made significant progress toward the transformation vision of being a modern, risk-informed regulator, particularly in the areas of innovation; employee retention, recruitment, and development; use of risk insights; and technology adoption
- Launched the internal agencywide “innovation platform,” and collected more than 480 innovation success stories and hosted approximately 20 innovation challenge campaigns
- Established a framework to incorporate risk considerations across all business lines and platforms, which was used to help determine certain licensing actions in response to COVID-19 considerations
- Provided technology infrastructure and training to allow 98 percent of the NRC workforce to transition to mandatory telework within days due to the COVID-19 pandemic, and increased the use of dashboards to enhance the automated use of data for decisionmaking and data analysis
- Established two career development platforms for NRC employees
- Overall achievements that contributed to the agency’s desired culture efforts:
 - Administered three Culture and Climate Surveys to 1,200 employees in March 2020, which created a baseline for culture improvement efforts
 - Developed an Agencywide Improvement Strategy and Implementation Plan and delivered presentations to staff.
 - Administered the Federal Employee Viewpoint Survey to all employees in September 2020 with 83 percent participation. The results showed 4 percent increase in employee engagement index (78 percent positive) and 3 percent increase in global satisfaction (75 percent positive).
 - Conducted discussions with management and champions in 22 offices and regions to review office/region-level culture improvement plans and identify best practices to share more broadly
 - Administered a culture pulse survey to all employees in April 2021 with 57 percent participation. The culture pulse survey showed a slight increase in constructive behavior; a significant decrease in defensive behavior; and increases in perceptions of employee involvement, communication, and adaptability.
 - Held three Executive Director for Operations Town Hall meetings to create a dialogue between staff and senior management about emergent topics of wide interest
 - Held 17 Leader Behavior Check-In sessions with groups of senior managers in June 2021 to create forums for leadership to model constructive behaviors in the agency’s desired culture
- Continued implementing innovative solutions via EMBARK Venture Studio to enable and promote a risk-informed mindset within the nuclear reactor safety program and other business lines
- Pursued substantial rulemaking activities on topics including American Society of Mechanical Engineers codes and code cases; licensing of advanced reactors; categorical exclusions from environmental reviews; and petitions for rulemaking submitted by members of the public
- Implemented Fiscal Year (FY) 2020 eBilling, a public facing, Web-based application for use by NRC licensees, that provides immediate delivery of NRC invoices, customizable e-mail notifications, the capability to view and analyze invoice details, and the convenience to access U.S. Treasury systems to pay invoices

- Issued 61 escalated enforcement actions under traditional enforcement, the Reactor Oversight Process, and the Construction Reactor Oversight Process; processed 15 enforcement actions that involved civil penalties (14 proposed, 1 imposed) totaling \$1,586,413 proposed and \$606,942 imposed; 9 were enforcement orders without a proposed civil penalty, and 37 were escalated notices of violation without a proposed civil penalty
- Published research results on a variety of topics related to operating facility safety, safety analysis, severe accident analysis, improved methods for risk assessment, embedded digital devices, flood hazard assessment, advanced manufacturing, and fire modeling
- Continued collaboration with the DOE under the Nuclear Energy Innovation Capabilities Act through signing a technical addendum on light-water reactor sustainability and MELCOR source term evaluation, and through a separate agreement with DOE on operating experience and data analysis sharing
- Continued collaboration with the DOE under the Nuclear Energy Innovation Capabilities Act through signing technical addenda for the National Reactor Innovation Center, on light-water reactor sustainability, and MELCOR source term evaluation, and through a separate agreement with DOE on operating experience and data analysis sharing.
- Received 88 educational proposals and 160 research and development (R&D) proposals under the Integrated University Program Funding Opportunity Announcements, grants awarded included 45 educational grants and 15 R&D grants totaling \$17.9 million in grants to 33 academic institutions.

International Activities

- Represented the NRC as part of U.S. delegations, negotiating agreements for civil nuclear cooperation (Section 123 Agreements) and participating in activities such as meetings of the Nuclear Suppliers Group, International Atomic Energy Agency (IAEA) Board of Governors, and Group of Seven Nuclear Safety and Security Group
- Issued 60 licenses to export nuclear materials and equipment
- Supported the development of enhanced regulatory infrastructure for radiological sources, research reactors, and nuclear power plant safety and security around the world through the provision of technical expertise and assistance funding thereby reinforcing U.S. Government national security and foreign policy objectives
- Participated in a U.S. Government delegation to international meetings addressing the implementation of treaties and conventions, including the Technical Meeting of Representatives to the Convention on the Physical Protection of Nuclear Materials (CPPNM) and its Amendment (A/CPPNM), and the meeting of the Preparatory Committee for the Conference of the Parties to the Amended CPPNM
- Participated in hundreds of virtual meetings with regulatory counterparts after international travel was suspended due to COVID-19
- Continued work under a first-of-a-kind memorandum of cooperation with the Canadian Nuclear Safety Commission to increase regulatory effectiveness through collaboration on the technical reviews of advanced reactors and small modular reactors
- Supported establishment of the Framework for Irradiation Experiments with the Organization for Economic Co-operation and Development/Nuclear Energy Agency to provide testing and examination capabilities for fuels and materials research to support new reactor technologies

Administration

- *Processed 288 Freedom of Information Act (FOIA) requests and 24 appeals in FY 2020, with 81 FOIA requests and 3 FOIA appeals pending by the end of FY 2020*
- *Conducted 155 investigation cases by the Office of Investigations for FY 2020 including 110 investigations, 60 of which were carried over from FY 2019, and also 45 assists to staff, 5 of which were carried over from FY 2019*
- *Conducted agency outreach to audiences interested in NRC activities, including through the use of social media*
- *Awarded and administered the agency's acquisition portfolio with obligations estimated more over \$255 million in FY 2020*

Public Meetings and Involvement

- *Revised the agency's public meeting policy and defined new public meeting categories to interact more effectively with stakeholders and the public*
- *During calendar year 2020 conducted approximately 639 open public meetings addressing a full range of NRC issues to support transparency with agency stakeholders and conducted 31 closed meetings*
- *Conducted 10 full committee meetings of the Advisory Committee on Reactor Safeguards and approximately 47 subcommittee meetings in fiscal year 2021; all of the ACRS meetings during the fiscal year were conducted virtually in response to COVID-19*
- *Held four public meetings of the Advisory Committee on the Medical Uses of Isotopes in calendar year 2020*
- *Hosted the first ever, all-virtual Regulatory Information Conference, which was also the highest attended to date with more than 4,300 people attending and 50 countries represented*
- *Created a new NRC eLearning initiative for children and adults who would like to know more about science, nuclear technology, and the NRC*

News and Information

- *Maintained the NRC Web site and free listserv subscription services at <https://www.nrc.gov/public-involve/listserve.html> to post and distribute NRC news releases*
- *Shared information with the public using social media through platforms that address the major categories of social communication, with a focus on social networking and microblogging (Facebook, LinkedIn and Twitter, respectively)*
- *In calendar year 2020, gained 960 followers on Twitter and sent 470 tweets; gained more than 880 page likes and published approximately 280 posts on Facebook; gained more than 3,000 followers and published approximately 100 posts on LinkedIn.*
- *Issued 146 news releases in FY 2020*

For more information on the agency's accomplishments, go to <https://www.nrc.gov/reading-rm/doc-collections/congress-docs/>.