Risk Informed Activities
Completed - Not Active - Replaced with Existing Website
(FY2022 Update)

The following risk-informed activity text was removed from the public website:

Cross-Cutting Activities Sub-Arena, Risk-Website refers to existing website
RG 1.200, Acceptability of Probabilistic Risk Assessment Results for Risk-Informed Activities (LWRs)

Cross-Cutting Activities Sub-Arena, Risk-Website refers to existing website
PRA Standards Development

Cross-Cutting Activities Sub-Arena, Risk-Website refers to existing website
Industry Peer Review Guidance Development

Cross-Cutting Activities Sub-Arena, Risk-Website refers to existing website
Regulatory Guide 1.174, An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant Specific Changes to the Licensing Basis

Cross-Cutting Activities Sub-Arena, Risk-Website refers to existing website
NUREG 1855, Guidance on the Treatment of Uncertainties Associated with PRAs in Risk-Informed Decisionmaking

Cross-Cutting Activities Sub-Arena, Risk-Website refers to existing website
Achieving the Vision of Becoming a Modern, Risk-Informed Regulator

Fuel Cycle Sub-Arena, Risk-Website refers to existing website
ANS Standard 57.11, "Integrated Safety Assessments for Fuel Cycle Facilities"

Fuel Cycle Sub-Arena, Risk Website refers to existing website
Rulemaking – Cybersecurity for Fuel Cycle Facilities

Fuel Cycle Sub-Arena, Risk Website refers to existing website
Rulemaking for Reprocessing Facilities

Cross Cutting Activities Sub-Arena, Risk-Website refers to existing website

RG 1.200, Acceptability of Probabilistic Risk Assessment Results for Risk-Informed Activities (LWRs)

Summary Description

Regulatory Guide (RG) 1.200 provides the staff position regarding what constitutes an acceptable PRA for a light-water reactor (LWR) and how the LWR PRA standards and peer review guidance are used to demonstrate conformance with the staff position. In this regard, RG 1.200 provides a definition for what constitutes a PRA and a staff position on PRA acceptability for LWRs addressing the (1) scope of a PRA, (2) technical elements of a PRA, (3) level of detail of a PRA, and (4) plant representation in the PRA model. RG 1.200 also provides a staff position on consensus PRA standards and industry peer review PRA programs, demonstration of the acceptability of a PRA for LWRs, and documentation to support a regulatory submittal. RG 1.200 also provides the NRC endorsement of the published American Society of Mechanical Engineers/American Nuclear Society (ASME/ANS) LWR PRA standards and related industry guidance documents on PRA peer review.

Previous Fiscal Years

FY 2015

Staff and industry continue to use RG 1.200 in support of risk-informed activities.

FY 2016

Staff and industry continue to use RG 1.200 in support of risk-informed activities. Staff developed a draft position for a process for closure of peer review findings. This staff position has not yet been incorporated into RG 1.200.

FY 2017

Staff and industry continue to use RG 1.200 in support of risk-informed activities. Staff initiated efforts for Revision 3 of RG 1.200.

FY 2018

Staff and industry continue to use RG 1.200 in support of risk-informed activities. Staff continues to work on Rev 3 of RG 1.200 and has held public meetings to share information and receive stakeholder input. Under this activity the infrastructure is developed to support risk-informed decision-making. The purpose of this activity is to provide the agency position on an acceptable base PRA such that the results from the PRA can be used in risk-informed decision-making.

FY 2019

Staff continues to work on Rev. 3 of RG 1.200 and continues to hold public meetings to share information and receive stakeholder input. Staff continues to work with stakeholders to address consistency with RG 1.174 (e.g., defense-in-depth, use of the term PRA acceptability), newly developed methods and guidance on peer reviews, among other changes.

FY 2020

Staff continues work on Revision 3 of RG 1.200 and held public meetings to share information and receive stakeholder input. The staff had numerous interactions with external stakeholders to share information on industry documents being prepared for endorsement in RG 1.200, Revision 3, that relate to peer review of PRAs and newly developed methods. The staff published a proposed revision of RG 1.200, Revision 3, designated as draft guide (DG) DG-1362, for public review and comment. Final publication of RG 1.200, Revision 3, is anticipated in FY2021.

FY 2021
RG 1.200, Revision 3, was published in December 2020. RG 1.200, Revision 3, endorses NEI 17-07, Revision 2, “Performance of PRA Peer Reviews Using the ASME/ANS PRA Standard,” issued August 2019; ASME/ANS RA-S Case 1, “Case for ASME/ANS RA-Sb-2013 Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment of Nuclear Power Plant Applications,” dated November 22, 2017; and portions of PWROG-19027-NP, Revision 2, “Newly Developed Method Requirements and Peer Review,” issued July 2020.

Cross Cutting Activities Sub-Arena, Risk-Website refers to existing website

PRA Standards Development

Summary Description
Staff participates with the ASME and ANS efforts to develop consensus PRA Standards. ASME and ANS work together under the Joint Committee for Nuclear Risk Management (JCNRM). The JCNRM is developing a suite of standards which (1) address operating LWRs, advanced LWRs in the pre-operational phases of design and licensing, and advanced non-LWRs, (2) address all operating modes (at-power and low power and shutdown (LPSD)), (3) address internal hazards (i.e., internal events, internal floods and internal fires) and external hazards (seismic, high winds, external floods and others), and (4) address all risk metrics (CDF, LERF/LRF, radiological release frequency, and consequences. These standards include:

- Level 1 (CDF)/LERF LWR PRA standard for at-power conditions, for internal hazards (i.e., internal events, floods and fires) and external hazards (i.e., fires, seismic, high winds, floods and others). This ASME/ANS PRA standard was published as an American National Standards Institute (ANSI) standard in 2008, Addendum A in 2009 and Addendum B in 2013.
- Level 2 (radiological release frequency) LWR PRA standard for all operating modes and for internal and external hazards. This was published as an ASME/ANS trial use standard for pilot applications in 2015.
- Level 3 (consequences) PRA standard for nuclear facilities and for all operating modes and internal and external hazards. This was published as an ASME/ANS trial use standard for pilot applications in 2017.
- LPSD LWR PRA standard addressing Level 1/LERF. This was published as an ASME/ANS trial use standard for pilot applications in 2015.
- Advanced LWR PRA standard for LWRs in the pre-operational phases of design and licensing for addressing Level 1/LERF. This standard has not been published.
- Advanced non-LWR (ANLWR) PRA standard for a full initiator-to-consequence analysis addressing all operating modes, all hazards, and all sources of radioactivity at a single site. This was published as an ASME/ANS trial use standard for pilot applications in 2013.
- Multi-unit LWR PRA standard for nuclear installations with two or more reactor units on a site. This standard has not been published

To date, the staff has endorsed the ASME/ANS Level 1/LERF PRA standard, specifically the 2009 addendum to the 2008 standard (i.e., ASME/ANS RA-Sb-2009).

Previous Fiscal Years
FY 2015

Staff continues to support JCNRM efforts on the various standard activities:

- working on the new edition to the published Level 1 (CDF)/LERF PRA standard
- published trial use Level 2 PRA standard
- developing the Level 3 PRA standard for trial use
- piloting the published trial use LPSD PRA standard
- developing the Advanced LWR PRA standard for trial use
- piloting the published trial use non-LWR PRA standard

FY 2016

Staff continues to support JCNRM efforts on the various standard activities:

- working on the new edition to the published Level 1 (CDF)/LERF PRA standard
- piloting the published trial use Level 2 PRA standard
- developing the Level 3 PRA standard for trial use
- piloting the published trial use LPSD PRA standard
- developing the Advanced LWR PRA standard for trial use
- piloting the published trial use non-LWR PRA standard

FY 2017

Staff continues to support JCNRM efforts on the various standard activities:

- working on the new edition to the published Level 1 (CDF)/LERF PRA standard
    - JCNRM published a Code Case which provides an alternate approach to Part 5 of the standard addressing seismic PRA
    - NRC developed draft comments on the Code Case (for approval) and planned to request external stakeholder feedback
- piloting the published trial use Level 2 PRA standard
- developing the Level 3 PRA standard for trial use
- piloting the published trial use LPSD PRA standard
- developing the Advanced LWR PRA standard for trial use
- piloting the published trial use non-LWR PRA standard

FY 2018

Staff continues to support JCNRM efforts on the various standard activities:

- working on the new edition to the published Level 1 (CDF)/LERF PRA standard; provided extensive comments to JCNRM and participated in JCNRM working groups
- finalizing the published trial use Level 2 PRA standard
- published the Level 3 PRA standard for trial use
- finalizing the published trial use LPSD PRA standard
- developing the Advanced LWR PRA standard for trial use
- finalizing the published trial use non-LWR PRA standard

Under this activity the infrastructure is developed to support risk-informed decision-making. The purpose of this activity is to provide the agency position on an acceptable base PRA such that the results from the PRA can be used in risk-informed decision-making.

FY 2019

Staff continues to support JCNRM efforts to revise the various PRA standards. Activities include:

- Support the development of the new edition of the Level 1 (CDF)/LERF PRA standard and preparing for ballot review in FY2020
- Support the development of the new edition of the Level 2 PRA standard and preparing for ballot review in FY2020
- Support the development of the non-LWR PRA standard and evaluate the endorsement of the trial use standard
- Support the development of the Level 3 and LPSD PRA standards
- Support the development of the Advance LWR trial use PRA standard

FY 2020

- Continued support for the development of the next edition of the ASME/ANS Level 1/LERF LWR PRA standard. The NRC voted on two ballot for this PRA standard and provided technical comments to the JCNRM in support of publishing the document.
- Continued support for the development of the Level 2 LWR PRA standard to prepare for subsequent ballot reviews for publication.
- Continued support for the development of the Level 3 LWR PRA standard to prepare for subsequent ballot reviews for publication.
- Continued support for the development of the LPSD LWR PRA standard to prepare for subsequent ballot reviews for publication.
- Continued support for the development of the ALWR PRA standard to prepare for subsequent ballot reviews for publication.
- Continued support for the development of the ANLWR PRA standard. The NRC voted on two ballot for this PRA standard and provided technical comments to the JCNRM in support of publishing the document. The staff are preparing for the review and endorsement of the ANLWR PRA standard after it is published as an ANSI standard.
- Supporting development of the multi-unit LWR PRA standard.

FY 2021

Continued support for the development of the next edition of the ASME/ANS Level 1/LERF LWR PRA standard. The NRC voted on two ballots for this PRA standard and provided technical comments to the JCNRM in support of publishing the document.

Continued support for the development of the Level 2 LWR PRA standard to prepare for subsequent ballot reviews for publication.

Continued support for the development of the Level 3 LWR PRA standard to prepare for subsequent ballot reviews for publication.

Continued support for the development of the LPSD LWR PRA standard to prepare for subsequent ballot reviews for publication.

Continued support for the development of the ALWR PRA standard to prepare for subsequent ballot reviews for publication.

Supported the development of the recently published NLWR PRA standard, ASME/ANS RA-S-1.4-2021. The NRC voted on two ballots for this PRA standard and provided technical comments to the

JCNRM in support of publishing the document. The staff reviewed the NLWR PRA consensus standard and are in the process of completing the endorsing trial use regulatory guidance document, RG 1.247.

Continued support for the development of the multi-unit LWR PRA standard.

Cross Cutting Activities Sub-Arena, Risk-Website refers to existing website

Industry Peer Review Guidance Development

Summary Description
Staff reviews and endorses the PRA peer review guidance issued by NEI regarding how to demonstrate conformance with related requirements in the ASME/ANS consensus PRA standards. RG 1.200 provides the staff position for what constitutes an acceptable peer review program for LWR PRA. A new regulatory guidance document on ANLWR PRA acceptability will similarly provide the staff position for what constitutes an acceptable peer review program for ANLWR PRA. The related NEI guidance documents either in development or that have been published include:

- NEI 00-02 provides the initial peer review guidance for internal events and internal floods Level 1 LWR PRA. It also includes a self-assessment to address the gap between the review criteria in NEI 00-02 and the ASME/ANS PRA standard. This document was published in 2000 and is endorsed in RG 1.200.
- NEI 05-04 provides the updated guidance to NEI 00-02 to be commensurate the ASME/ANS PRA standard and addresses internal events and internal floods Level 1/LERF LWR PRA. This document was published in 2005 and is endorsed in RG 1.200.
- NEI 07-12 provides the peer review guidance for internal fire Level 1/LERF LWR PRA. This document was published in 2007 and is endorsed in RG 1.200.
- NEI 12-13 provides the peer review guidance for external hazards Level 1/LERF LWR PRA. This document was published in 2012 and the NRC issued a letter providing comments on the guidance, but it has not been endorsed in RG 1.200.
- NEI-17-07, provides peer review guidance for all hazards and can be used as an alternative to NEI 00-02, NEI 05-04, NEI 07-12, and NEI 12-13
- NEI 20-09, provides peer review guidance for all hazards, all modes, and all sources for an ANLWR PRA.

Previous Fiscal Years
FY 2015

NEI 00-02 – continues to be endorsed in RG 1.200

- NEI 05-04 – continues to be endorsed in RG 1.200
- NEI 07-12 – continues to be endorsed in RG 1.200
- NEI 12-13 – has not been endorsed in RG 1.200

FY 2016

NEI 00-02 – continues to be endorsed in RG 1.200

- NEI 05-04 – continues to be endorsed in RG 1.200
- NEI 07-12 – continues to be endorsed in RG 1.200
- NEI 12-13 – has not been endorsed in RG 1.200

FY 2017

NEI 00-02 – continues to be endorsed in RG 1.200

- NEI 05-04 – continues to be endorsed in RG 1.200
- NEI 07-12 – continues to be endorsed in RG 1.200
- NEI 12-13 – has not been endorsed in RG 1.200
    - NRC developed draft comments on NEI 12-13 (for staff approval) and planned to request external stakeholder feedback
- Appendix "x" – The staff continued to observe uses of the appendix. The staff issued a letter providing interim approval of the process given certain staff comments were addressed. This appendix has not yet been endorsed in RG 1.200.
- NEI informed the staff of their intention to develop guidance, "Performance of PRA Peer Reviews Using the ASME/ANS PRA Standard." This guidance document is meant to replace the previous individual guidance documents.

FY 2018

NEI published NEI-17-07, "Performance of PRA Peer Reviews Using the ASME/ANS PRA Standard." This guidance document is meant to replace the previous individual guidance documents. The staff completed their initial review of this document.

Under this activity the infrastructure is developed to support risk-informed decision-making. The purpose of this activity is to provide the agency position on an acceptable base PRA such that the results from the PRA can be used in risk-informed decision-making.

FY 2019

NRC staff continues to work towards developing a position for NEI 17-07 which is expected to be endorsed in a future revision to Regulatory Guide 1.200.

FY 2020

- NRC staff reviewed NEI 17-07, Revision 2, which will be endorsed in Regulatory Guide 1.200, Revision 3.
- NRC providing feedback on the development of NEI 20-09. The staff anticipate endorsing this document in new regulatory guidance on ANLWR PRA Acceptability.

FY 2021
The staff endorsed NEI 17-07, Revision 2, in Regulatory Guide 1.200, Revision 3.

The staff plan to endorse NEI 20-09, Revision 1, in the trial-use RG 1.247.

Cross Cutting Activities Sub-Arena, Risk-Website refers to existing website

Regulatory Guide 1.174, An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant Specific Changes to the Licensing Basis

Summary Description

As directed by the Commission in SRM-SECY-15-0168, Regulatory Guide (RG) 1.174, Revision 3 was developed to assure consistent interpretation and implementation of the defense-in-depth philosophy. RG 1.174 provides guidance on the use of PRA findings and risk insights to support licensee requests for changes to a plant's licensing basis, as in requests for license amendments and technical specification changes under Title 10 of the Code of Federal Regulations (10 CFR) Sections 50.90, "Application for Amendment of License, Construction Permit, or Early Site Permit," and 50.92, "Issuance of Amendment."

Previous Fiscal Years

FY 2015 Status

The current status of this activity remains unchanged from the previous risk-informed activities update. Additional information is available.

FY 2016 Status

During this fiscal year, the staff continued to meet with internal and external stakeholders to solicit their input into the update of RG 1.174. The focus of this activity is a review and update of RG 1.174 and other related guidance documents (e.g., RGs 1.175, 1.177, and 1.178) to clarify the staff position on how the defense-in-depth principles of the integrated risk-informed decision-making process are addressed in the review of a licensee's request to change its licensing basis.

FY 2017 Status

During this fiscal year, the staff continued revising the defense-in-depth guidance and soliciting input from internal and external stakeholders, including feedback from the Advisory Committee on Reactor Safeguards (ACRS) Subcommittee on Reliability and PRA. The staff published for public review and comment an update of the draft regulatory guide for Revision 3 of RG 1.174 (i.e., DG 1285). The staff resolved all internal and external stakeholder comments on DG-1285 and prepared to meet with and receive feedback from the ACRS Full Committee on the final draft of the revised RG.

FY 2018

Staff finalized Revision 3 to RG 1.174 which was published in January 2018. The primary revisions involved updating the guidance on defense-in-depth.

RG 1.174 describes an acceptable approach for assessing the nature and impact of proposed licensing basis changes by considering engineering issues and applying risk insights. The intent of

the assessment is to demonstrate the proposed licensing basis changes will only result in small increases in risk and only when it is also reasonably assured that, among other things, consistency with the defense-in-depth philosophy and sufficient safety margins are maintained.

FY 2019

Staff and industry continue to use RG 1.174 in support of risk-informed activities.

FY 2020

Staff and industry continue to use RG 1.174 in support of risk-informed activities.

FY 2021
Staff and industry continue to use RG 1.174 in support of risk-informed activities

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Cross Cutting Activities Sub-Arena, Risk-Website refers to existing website

NUREG 1855, Guidance on the Treatment of Uncertainties Associated with PRAs in Risk-Informed Decisionmaking

Summary Description
This document provides guidance on how to treat uncertainties associated with PRA in risk-informed decision-making with regard to: 1) Identifying and characterizing the uncertainties associated with PRA in support of the PRA standard, 2) performing uncertainty analyses to understand the impact of the uncertainties on the results of the PRA, and 3) factoring the results of the uncertainty analyses into decision-making. This NUREG also provides guidance on how to meet the ASME/ANS PRA standard requirements for addressing uncertainties in the PRA model. NRC recognized that the Electric Power Research Institute (EPRI) also was performing work in this area with similar objectives. Both NRC and EPRI believed a collaborative effort to have technical agreement and to minimize duplication of effort would be more effective and efficient.

Previous Fiscal Years
FY 2015

Revision to the document is under review.

FY 2016

A public workshop was held to "pilot" the Revision 1 draft and finalize for publication.

FY 2017

The staff published Revision 1 to the NUREG. The revision provided additional text to further clarify the guidance and the relationship to the associated EPRI documents. In addition, the staff developed a Web-based training course for both internal and external stakeholders. The course is designed for both staff and management. It teaches the concepts used in the guidance for treating PRA uncertainties in risk-informed decisionmaking. The course has options that allows the user to take a shorter version of the course or go into more detail.

FY 2018

The staff continues to work on developing a training handbook to NUREG-1855. The handbook is meant to provide examples to illustrate how to implement the guidance in the NUREG.

NUREG-1855 helps the decision maker understand to what extent the risk results are impacted by the uncertainties, understand whether there are risk results that may challenge the risk acceptance guidelines, and to determine if the driver for the large uncertainties can be identified and remediated.

FY 2019

The staff continues to work on developing a training handbook to NUREG-1855. The handbook is meant to provide examples to illustrate how to implement the guidance in the NUREG.

FY 2020

The staff continue to work on developing a training handbook to NUREG-1855, which is intended to provide examples illustrating how to implement the guidance in the NUREG. The staff are also preparing for a new revision to NUREG-1855 to make it current with respect to the next edition of the Level 1/LERF LWR PRA standard and in consideration of other potential enhancements.

FY 2020
Staff and industry continue to use NUREG-1855 in support of risk-informed activities. The staff continue preparations for the next revision of NUREG-1855 to align with the next edition of the ASME/ANS Level 1/LERF LWR PRA standard and to consider other potential enhancements such as expanded guidance on the treatment of uncertainties in PRA for advanced LWRs.

Cross Cutting Activities Sub-Arena, Risk-Website refers to existing website

Achieving the Vision of Becoming a Modern, Risk-Informed Regulator

Summary Description
In the Executive Director for Operations update of September 6, 2019, the EDO stated that we will know we have become a modern, risk-informed regulator when we've embraced improvements in our decision-making, adoption of technology, a culture of innovation, and a focus on recruiting, developing, and retaining a strong workforce. The update identified seven initiatives to address

these focus areas in the near-term and stated that other initiatives would be launched in mid-2020. The initiatives will build upon and complement the important work going on throughout the agency.

The seven initiatives are:

- **Accepting risk in decision-making:** This team will develop a common understanding of what it means to accept risk, how it connects to our transformation vision, and how risk insights should be applied in the NRC's work (corporate support, legal, or technical)
- **Agency desired culture:** This team will build into the NRC's culture a mindset that welcomes change, while reinforcing the behaviors and outcomes described in the agency's Leadership Model
- **Career enhancement:** This team will clarify and communicate opportunities to ensure that all staff understand available paths that will enable them to grow throughout their careers
- **Innovation:** This team will finalize and implement the new "Innovate NRC" process and technology platform to create and sustain a culture of innovation
- **Process simplification:** This team will be responsible for simplifying and reinforcing NRC's processes to achieve greater efficiency
- **Signposts and markers:** This team will determine the key signposts and markers from those identified in the Futures Assessment Report and adapt NRC's decision-making process to incorporate these indicators, ensuring the agency is better prepared to, in turn, adapt to a changing external landscape
- **Technology services:** This team will enable all staff to easily and efficiently complete their work with available technology and increase the use of new and existing technology across the agency

Previous Fiscal Years

FY 2019

Each of these initiatives will be implemented by an initiative team and supported by one or more executive sponsors. Each of these initiatives will have its own timeline – some shorter, some longer-term. Future Agency-Wide Risk-Informed Activities Updates will address these initiatives, separately as appropriate.

FY 2020

The Office of the Executive Director for Operations' Be riskSMART initiative team is developing a holistic, high-level framework that gives staff confidence to consistently apply and communicate risk insights for all NRC decisions (including technical, corporate, and legal decisions) without compromising our mission. The framework includes guidance and steps for identifying and managing risk (for issues where there is no pre-determined answer in a law, policy, or standard); performance metrics for how well we are considering risk; and training to ensure a common understanding of risk.

Figure: Summary of the Be riskSMART risk-informed decision-making framework.

The figure above summarizes the key steps of the Be riskSMART framework: Be… clear about the problem; Spot… what can go wrong or right?, what are the consequences?, and how likely is it?; Manage… what you can; Act… on a decision; Realize… the result, and Teach… others what you learned.

The arrow illustrated under the Be riskSMART logo represents the prompt re-evaluation of a decision to determine if conditions have changed or new information is available.

A diagnostic tool was developed to measure NRC staff's current state in evaluating the agency's effectiveness for applying risk-insights. This tool can be used to identify who owns or implements the use of risk-insights in decision-making.

Training is being developed for the staff to overcome any challenges and barriers with applying risk insights in decision-making. The purpose of the training is to ensure that the staff shares a common understanding of risk and how it can be used in decision-making across the agency.

FY 2021
No Update

Fuel Cycle Sub-Arena, Risk Website refers to existing website.

ANS Standard 57.11, "Integrated Safety Assessments for Fuel Cycle Facilities"

Summary Description
In SECY-12-0091, "Completeness and Quality of Integrated Safety Analyses," the staff recommended to the Commission that the staff request the American Nuclear Society (ANS) to develop an integrated safety analysis (ISA) standard. This standard would provide guidance on

performing a complete, high-quality ISA. In addition to approving the staff's recommendation, the Commission instructed the staff to abstain from revising NUREG-1520, "Standard Review Plan for Fuel Cycle Facilities License Applications," in the areas related to the ISA standard until the standard's issuance. These areas include elements of risk analysis such as common cause failure, human error, and accident sequence screening.

In 2013, the ANS established a working group under the Nonreactor Nuclear Facilities Committee (NRNF) for proposed standard 57.11, "Integrated Safety Assessments for Fuel Cycle Facilities." The working group consists of representatives from the industry, Department of Energy (DOE), and the Nuclear Regulatory Commission (NRC). The staff actively participated in the initial drafts of the standard until 2015 when the staff reduced its participation in standards development as part of Project AIM.

The issuance of the standard is a high priority activity based on the tasks included in the Westinghouse Lessons Learned Action Plan. Specifically, the action plan included a high-priority task to evaluate the license review process. The staff recommended revising NUREG-1520 to address the risk-related findings of the Westinghouse Lessons Learned Report. The staff elevated the priority of issuing the ISA standard because of the standard's influence on the staff's ability to revise NUREG-1520.

Previous Fiscal Years

FY 2017

The staff engaged the NRNF Committee Chair and ANS 57.11 Working Group Chair to move forward on the standard.

- The ANS 57.11 Working Group Chair submitted a revised draft to the working group for review and comment.
- The staff provided its comments, primarily recommending that the working group restructure the standard to provide a more systematic framework for the technical elements and supporting requirements needed to achieve a robust ISA.

FY 2018

The staff continues to participate in activities to facilitate the issuance of the standard.

- The staff participated in a working group meeting to restructure and revise the draft standard.
- The Working Group Chair submitted the revised version to the entire working group with the goal of presenting it to the NRNF Committee at the November 2018 ANS meeting.

FY 2019

This potential ANS Standard provides guidance for performing integrated safety analyses (ISAs), which are used to demonstrate the hazards associated with special nuclear material processing (to public and workers) do not exceed the risk-informed performance requirements of 10 CFR 70, Subpart H.

The staff continues to participate in activities to facilitate the completion and issuance of the standard so that the NRC can endorse the standard with appropriate qualifications and clarifications. The working group's resolution of the comments received from the NRNF Committee is expected to

be completed by the end of the 2019 calendar year; with resubmission to the NRNF Committee in early 2020.

FY 2020

This potential ANS Standard provides guidance for performing integrated safety analyses (ISAs), which are used to demonstrate the hazards associated with special nuclear material processing (to public and workers) meet the risk-informed performance requirements of 10 CFR 70, Subpart H.

The staff continues to participate in activities to facilitate the completion and issuance of the standard so that the NRC can endorse the standard with appropriate qualifications and clarifications. The working group (previously led by a DOE representative) is pursuing the identification of an individual to lead the effort to completion, which will involve the final resolution of outstanding comments received from the ANS Non-Reactor Nuclear Facility Committee (NRNFC) followed by resubmission to the NRNFC. Recognizing the potential for continued delays in issuance, especially if a new lead is not identified, the staff has developed alternative approaches to move forward in enhancing staff review guidance in this area.

FY 2021 The staff continues to participate in activities to facilitate the completion and issuance of the standard. After issuance, the NRC can endorse the standard with appropriate qualifications and clarifications. The ANS 57.11 working group has selected a new chairperson who is actively seeking to resolve outstanding comments received from the ANS Non-Reactor Nuclear Facility Committee (NRNFC). However, because there is still the potential for continued delays in issuance, if necessary, the staff is prepared to move forward with alternative approaches to enhancing staff review guidance.

Fuel Cycle Sub-Arena, Risk Website refers to existing website.

Rulemaking – Cybersecurity for Fuel Cycle Facilities

For more information see existing public website:

TOP | RETURN TO LIST

Fuel Cycle Sub-Arena, Risk Website refers to existing website.

Rulemaking for Reprocessing Facilities

Summary Description
In SRM-SECY-13-0093, the Commission approved development of a reprocessing-specific rule in a new 10 CFR Part 7X. In the SRM the Commission also directed that the continued development of the regulatory framework for reprocessing be limited in scope, for the time being, to the resolution of "Safety and Risk Assessment Methodologies and Considerations for a Reprocessing Facility."

The purpose of this activity is to develop the foundation for the potential regulatory framework for reprocessing to enable a risk-informed licensing and oversight process by:

- Evaluating methods for hazards and risk evaluations that can be implemented for aqueous and electrochemical reprocessing facilities;
- Identifying performance requirements for a risk-informed regulatory framework; and
- Obtaining peer review and public comments on the safety and risk assessment methodologies.

Previous Fiscal Years

FY 2015

Process flow diagrams and facility descriptions were developed for a conceptual aqueous reprocessing facility, with associated event and fault trees for a hypothetical red-oil explosion. Preliminary best-estimate source term analyses were calculated and indicated a potential dose reduction of orders of magnitude, compared to the existing conservative approaches.

FY 2016

Mindful of limiting the scope of work as directed in SRM-SECY-13-0093, event and fault trees were developed for a hypothetical loss of cooling (LOC) accident to a concentrated high level waste storage tank. Preliminary quantification of the accident sequence was carried out using generic failure and probability data. Items Relied On For Safety (IROFS) were identified for both the hypothetical red-oil explosion and LOC accident sequences.

FY 2017

Work on the fuel reprocessing regulatory framework related to assessing the application of quantitative risk analysis (identified as Gap 5 in SECY-13-0093) was delayed during FY 2017 because of other higher priority activities.

FY 2018

Work on the fuel reprocessing regulatory framework continued to be delayed during FY 2018 because of other higher priority activities. In FY 2019, the staff plans to seek stakeholder input on continuing or discontinuing the effort on developing the regulatory framework and development of a reprocessing-specific rule. Specific details on current rulemaking activities are provided in the NRC's centralized rulemaking tracking and reporting system at NRC Rules and Petitions.

FY 2019

Work on the fuel reprocessing regulatory framework continued to be delayed during FY 2019 because of other higher priority activities. A decision on continuing or discontinuing this activity is expected in FY 2020 based on commercial interest and cost associated with any proposed action. Specific details on current rulemaking activities are provided in the NRC's centralized rulemaking tracking and reporting system at NRC Rules and Petitions.

FY 2020

Work on the fuel reprocessing regulatory framework continued to be on hold during FY 2020. On March 4, 2020, the NRC staff held a Category 3 public meeting, to discuss the status of the spent fuel reprocessing rulemaking, which focuses on spent fuel from light water reactors. The purpose of the meeting was to provide stakeholders an opportunity to provide their opinion on the need for the

rulemaking, and to seek information from industry regarding interest in constructing, operating and licensing a spent fuel reprocessing facility (ADAMS Accession No. ML20077K144). A decision on continuing or discontinuing this activity is expected in FY 2021, taking into consideration of stakeholder feedback obtained during the March 4th public meeting, commercial interest in reprocessing activities, and cost associated with any proposed action. Specific details on current rulemaking activities are provided in the NRC's centralized rulemaking tracking and reporting system at NRC Rules and Petitions.

FY 2021

The rulemaking was discontinued due to limited interest expressed or expected from industry to submit an application for any type of facility involving reprocessing technologies in the near-term. Considering the cost to complete the rulemaking, the NRC concluded that it was not warranted. Federal Register Notice 86 FR 40764 (July 29, 2021).