

Risk Informed Activities Completed or Not Active

(FY2019 Update)

The following risk-informed activities were removed from the public website because they are no longer active:

Consequential SG Tube Rupture Probability and Consequence Assessment

Implementation of Lessons Learned from Uranium Accumulation Event

Medical Use of Byproduct Materials 10CFR35 – Medical Event Definitions, Training and Experience, and Clarifying Amendments

Increasing License Terms for Uranium Recovery Facilities

Aligning the Inspection Hours with the Stage of Decommissioning for Power Reactors

Consequential Steam Generator Tube Rupture Probability and Consequence Assessment

Summary Description

Consequential steam generator tube ruptures (C-SGTRs) are potentially risk-significant events because thermally-induced steam generator tube failures caused by hot gases from a damaged reactor core can result in a containment bypass event and a large release of fission products to the environment. The main accident scenarios of interest are those that lead to core damage with high reactor pressure, a dry-steam generator, and low steam generator pressure (high-dry low) conditions. A typical example of such an accident scenario is a station blackout with loss of auxiliary feedwater. The objective of this program is to develop a simplified methodology for the quantitative assessment C-SGTR probability and large early-release frequency (LERF) for pressurized-water reactors (PWRs). A draft report was updated using the latest thermal hydraulic MELCOR results for Combustion Engineering (CE) plants.

FY 2015

A draft report is being finalized to document the research results from this study. It is expected that the report will be issued for public review and comment in late calendar year 2015 and finalized in 2016. This work was [presented](#) to the ACRS Metallurgy and Reactor Fuels Subcommittee on April 7, 2015. A draft version of the report was [provided](#) to the ACRS.

FY 2016

The "Consequential SGTR Analysis for Westinghouse and Combustion Engineering Plants with Thermally Treated Alloy 600 and 690 Steam Generator Tubes – Draft Report for Comment ([NUREG-2195](#))," was issued for public comments. Public comments were received and were addressed. A final NUREG is expected to be issued late in 2017.

FY 2017

The final [NUREG-2195](#) is in the publication process and will be available by early calendar year 2018.

FY 2018

The C-SGTR project, based on the work request by NRR, has been completed in 2018.

The following main deliverables were issued:

- NUREG-2195
- RASP Manual Volume 5 on LERF, including C-SGTR. (draft, not publicly available).
- C-SGTR Calculator

A presentation on the subject and on the project was given to NRC staff on September 5, 2018.

A project closure letter from RES to NRR is to be issued in the first quarter of 2019.

Implementation of Lessons Learned from Uranium Accumulation Event

Summary Description

In 2016 a fuel fabrication facility discovered a significant amount of uranium had accumulated within a process ventilation system that exceeded the system's criticality safety evaluation limits. Although a criticality did not occur, the event was considered significant. In addition to the expected regulatory response to the event (including an augmented inspection, [confirmatory action letter](#), [information notice](#), etc.), the staff [initiated](#) an effort to capture lessons from the event that could be used to improve the regulatory processes so that similar events are avoided or identified earlier.

FY 2017

In January 2017, the lessons-learned team issued "[Report on Lessons-Learned from the Westinghouse Uranium Accumulation in Scrubber and Ventilation Event](#)" that identified potential improvements in five regulatory process areas: license application review, inspection program,

operating experience program, roles and responsibilities, and knowledge management. An action plan was developed to prioritize and further evaluate the potential improvements identified in the lessons-learned report. The activity is in the implementation phase for the recommended high-priority items.

FY 2018

Many of the areas identified for potential improvement within the lessons-learned report relate to the consideration of, and technical bases for, the risk insights and significance derived from the licensee's analyses. The use of these insights can have a direct effect on the license review process and inspection program. Of the 25 actions included in the action plan, 15 actions were identified as being high or medium priority. Of these 15 actions, 4 actions correlate directly with using risk information and insights in the licensing review and inspection program:

- Develop guidance for examining the technical justification for accident sequences designated as low risk.
- Revise the inspection program to modify the scope and focus of inspections whereby facility systems and processes with the potential for intermediate or high consequences, regardless of perceived risk significance, are inspected within a specified period of time.
- Develop additional guidance in Inspection Procedure (IP) 88070 for inspectors on reviewing 10 CFR 70.72 [facility] changes and ISA Summary updates [facility safety analyses that address hazards, develop accident sequences, and use risk thresholds for acceptance] to support inspection planning and in-depth inspection sampling.
- Review IPs to eliminate or decrease the periodicity of activities that have minimal oversight benefit to safety and enhance activities that have more oversight benefit. For instance, the maintenance IP could be refocused to look more at safety and risk significant components and evaluate recurring problems, equipment maintenance trends and entrance into the corrective action program.

During FY 2018 these risk-related activities were completed via transfer to other agency processes for implementation.

Medical use of Byproduct Material (10 CFR Part 35) – Medical Event Definitions, Training and Experience, and Clarifying Amendments

Summary Description

This rule continues the risk-informed, performance-based framework already present in 10 CFR Part 35. In this rulemaking, the NRC addresses several ongoing rulemaking projects related to NRC regulations of medical use of byproduct material. First, this rule amends the medical event definition for reporting and notification requirements for permanent implant brachytherapy and the underlying requirement differs based on the event. The medical event criteria are being

revised to more accurately reflect the different risks of different uses of byproduct material in medical applications. This will result in the NRC receiving notification of medical events that are clinically significant. This rule also amends the training and experience (T&E) requirements to (1) remove the requirement to obtain a written attestation for an individual who is certified by a specialty board whose certification process has been recognized and (2) address a petition request filed to exempt certain board-certified individuals from certain T&E requirements (i.e., "grandfather" these individuals). The T&E updated requirements differ based on type of use and radioisotope involved in the treatment since the administration of certain drugs represents a lower risk significance than others. Additionally, this rule amends the requirements for measuring molybdenum contamination; adds a new requirement for the reporting of failed technetium and rubidium generators; and allows licensees to name associate radiation safety officers (ARSOs) on a medical license. The proposed rule was published on July 21, 2014 ([79 FR 42410](#)) for 120-day public comment period. The proposed [guidance](#) was noticed on the same day.

This rule continues the risk-informed, performance-based framework already present in 10 CFR Part 35. The reporting and notification requirements for medical events are being updated as part of this rulemaking and the underlying requirement differs based on the event. The medical event criteria are being revised to more accurately reflect the different risks of different uses of byproduct material in medical applications. This will result in the NRC receiving notification of medical events that are clinically significant. Furthermore, the training and experience requirements are being updated and differ based on type of use and radioisotope involved in the treatment. The administration of certain drugs represents a lower risk significance than others and this is reflected in the training and experience requirements of 10 CFR Part 35.

FY 2015

The NRC staff considered public comments as they developed the proposed final rule.

FY 2016

The staff sent the proposed final rule to the Commission for their approval in [SECY-16-0080](#).

FY 2017

The Commission approved the [final rule](#) on August 17, 2017, in Staff Requirements Memorandum, SECY-16-0080 – Final Rule: Medical Use of Byproduct Material – Medical Event Definitions, Training and Experience, and Clarifying Amendments (RIN 3150-AI63: NRC-2008-0175).

FY 2018

The NRC staff finalized the rule and the rule was published on July 16, 2018 in the Federal Register (83 FR 33046). The new regulations and guidance will become effective on January 14, 2019.

Increasing License Terms for Uranium Recovery Facilities

Summary Description

As discussed in [NUREG/CR-6733](#), participation in licensing activities, information gained from site visits, and discussions with NRC staff members supported a broad assumption that uranium in situ leach facilities pose inherently low risk, however groundwater monitoring and restoration are key to protection of people and the environment. In [SECY-17-0086](#), the NRC staff proposed to increase the maximum license term from 10 to 20 years for all new UR licenses and license renewals. The NRC staff requested to reserve the option to issue license terms for less than 20 years where the applicant or licensee introduces a new process or new technology. In the SECY, the staff determined that extending the license term for UR facilities to 20 years would not change the health and safety requirements currently in licenses. A 20-year license would grant the same authorizations and have the same conditions as a 10-year license. Regulatory oversight will be maintained to ensure adherence to requirements and conditions. Thus, given the relatively low level of risk involved in the current operations of these facilities, and their historical performance, the NRC staff determined that issuing license terms for a maximum of 20 years will not adversely impact the protection of public health and safety and protection of the environment.

FY 2016

In 2016, the NRC staff initiated an internal review of UR licenses to determine if initial license terms and renewal terms should be increased. Materials license terms have been reviewed on multiple occasions, and precedent existed for increasing materials license terms.

FY 2017

On November 9, 2017, the Commission [approved](#) the staff's recommendation to implement a maximum license term of 20 years for new applications and license renewals for uranium recovery facilities.

FY 2018

Staff reached out to licensees regarding the 20-year license renewal option. Neither licensee chose to pursue a 20-year license

Aligning the Inspection Hours with the Stage of Decommissioning for Power Reactors

Summary Description

The decommissioning power reactor inspection program describes the inspection requirements for the decommissioning of 10 CFR Part 50 power reactor licensees. The decommissioning of power reactors may take up to 60 years depending on a number of considerations. In addition, the decommissioning activities at a specific facility may range from relative inactivity (e.g., deferred dismantlement under SAFSTOR) to activities that have a greater potential to challenge public health and safety and the environment (e.g., active dismantlement under DECON). Because of this wide range of decommissioning and safety considerations, the NRC issued Inspection Manual Chapter 2561, "Decommissioning Power Reactor Inspection Program," to promulgate inspection requirements and guidance necessary to provide reasonable assurance that (1) the NRC's regulatory oversight contributes to the protection of public health and safety, and (2) NRC staff oversight and inspection resources are effective, consistent, and appropriately focused.

The revision to the decommissioning power reactor inspection program emphasizes balanced oversight and review of a cross-section of licensee activities important to the conduct of safe decommissioning and spent fuel safety. Licensee decommissioning programs and procedures should be assessed to ensure that they afford a comparable level of quality, rigor, and effectiveness as those in existence during power reactor operations, while taking into consideration the decreased risk to public health and safety and the environment that is present at a decommissioning facility. The decommissioning power reactor inspection program provides NRC management with flexibility in the allocation of inspection resources to address emergent activities and potential issues at specific decommissioning power reactors.

IMC-2561 outlines eight categories of decommissioning activities and provides a table with the recommended average annual inspection hours for each of these categories.

FY 2018

On March 8, 2018, NRC issued the revision to IMC-2561 closing this issue.