NATIONAL SCIENCE FOUNDATION

Notice of Permit Modification Received Under the Antarctic Conservation Act of 1978

AGENCY: National Science Foundation.

ACTION: Notice of permit modification request.

SUMMARY: The National Science Foundation (NSF) is required to publish a notice of requests to modify permits issued to conduct activities regulated under the Antarctic Conservation Act of 1978. This is the required notice of a requested permit modification.

DATES: Interested parties are invited to submit written data, comments, or views with respect to this permit application by October 29, 2018. Permit applications may be inspected by interested parties at the Permit Office, address below.

ADDRESSES: Comments should be addressed to Permit Office, Office of Polar Programs, National Science Foundation, 2415 Eisenhower Avenue, Alexandria, Virginia 22314.

FOR FURTHER INFORMATION CONTACT: Nature McGinn, ACA Permit Officer, at the above address, 703–292–8030, or *ACApermits@nsf.gov.*

SUPPLEMENTARY INFORMATION: The National Science Foundation, as directed by the Antarctic Conservation Act of 1978 (Pub. L. 95–541), as amended by the Antarctic Science, Tourism and Conservation Act of 1996, has developed regulations for the establishment of a permit system for various activities in Antarctica and designation of certain animals and certain geographic areas a requiring special protection. The regulations establish such a permit system to designate Antarctic Specially Protected Areas.

Description of Permit Modification Requested: The Foundation issued a permit (ACA 2016–020) to Laura K.O. Smith, Owner, Operator Quixote Expeditions, on December 23, 2015. The issued permit allows the permit holder to conduct waste management activities associated with the operation of the ''Ocean Tramp,'' a reinforced ketch rigged sailing yacht in the Antarctic Peninsula region. Activities to be conducted by Quixote include: Passenger landings, hiking, photography, wildlife viewing, and possible station visits.

A recent modification to this permit, dated November 22, 2017, permitted coastal camping activities in select locations and resupply of fresh food to the Quixote Expeditions vessel as part of fly/cruise operations.

Now the permit holder proposes a modification to the permit to add a second vessel to support Quixote Expeditions activities, to conduct ship-to-ship fuel transfers, to release comminuted food waste (excepting poultry) at sea, and to operate a remotely piloted aircraft for educational and commercial purposes. In addition to the sailboat, Ocean Tramp, Quixote Expeditions would operate the motor vessel, Hans Hansson, in the Antarctic Peninsula region. The Hans Hansson would carry four or five crew members and up to 12 passengers. The vessel is capable of carrying up to 54,000 liters of diesel fuel in internal tanks; 500 liters of gasoline in a closed tank; four, 11 kg bottles of propane; and two liters of white gas in bottles. The permit holder proposes to conduct fuel transfers from the Hans Hansson to the Ocean Tramp, should it become necessary. Any such fuel transfers would follow precise fuel transfer procedures, with a shipboard oil pollution emergency plan kit readily available, and with no other concurrent activities happening. The permit holder proposes to release food waste, except poultry products, that has been reduced to small particles or ground into the sea at least 12 nautical miles from land. Quixote Expeditions would continue to hold all poultry waste, including eggs and eggshells, onboard for eventual disposal north of 60 degrees South or once in port outside Antarctica. The permit holder proposes to operate a small, battery-operated remotely piloted aircraft system (RPAS) consisting, in part, of a quadcopter equipped with a camera to collect commercial and educational footage of the Antarctic, as well as for ice reconnaissance. The quadcopter would not be flown over concentrations of birds or mammals, or over Antarctic Specially Protected Areas or Historic Sites and Monuments. The RPAS would only be operated by experienced pilots (≤20 hours). Several measures would be taken to prevent against loss of the quadcopter including a highly visible paint color; only operating when the wind is less than 15 knots; operating for only to within 70% of battery life; having prop guards on propeller tips; using a flotation device if operated over water; having an observer on the lookout for wildlife, people, and other hazards; and ensuring that the separation between the operator and quadcopter does not exceed visual contact. The applicant is seeking a Waste Permit to cover any accidental releases that may result from operating the RPAS.

Location: Antarctic Peninsula; For camping, possible locations include Dorian Cove, Enterprize Isand, Cuverville are/Errera Channel, Damoy Point/Dorian Bay, Danco Island, Rongé Island, Paradise Bay, Argentine Islands, Andvord bay, Pleneau Island, Hovgaard Island, Orne Harbour, Leith Cove, Prospect Point, Portal Point.

Dates of Permitted Activities: December 1, 2018–February 6, 2021.

Suzanne H. Plimpton,

Reports Clearance Officer, National Science Foundation.

[FR Doc. 2018–21125 Filed 9–27–18; 8:45 am]

BILLING CODE 7555–01–P

NATIONAL SCIENCE FOUNDATION

Notice of Permits Issued Under the Antarctic Conservation Act of 1978

AGENCY: National Science Foundation.

ACTION: Notice of permits issued.

SUMMARY: The National Science Foundation (NSF) is required to publish notice of permits issued under the Antarctic Conservation Act of 1978. This is the required notice.

FOR FURTHER INFORMATION CONTACT: Nature McGinn, ACA Permit Officer, Office of Polar Programs, National Science Foundation, 2415 Eisenhower Avenue, Alexandria, VA 22314; 703–292–8030; email: *ACApermits@nsf.gov.*

SUPPLEMENTARY INFORMATION: On August 16, 2018, the National Science Foundation published a notice in the **Federal Register** of permit applications received. The permits were issued on September 20, 2018 to:

1. Caitlin Scarano—Permit No. 2019–003
2. Brenda Hall—Permit No. 2019–004
3. Michelle LaRue—Permit No. 2019–006

Suzanne H. Plimpton,

Reports Clearance Officer, National Science Foundation.

[FR Doc. 2018–21124 Filed 9–27–18; 8:45 am]

BILLING CODE 7555–01–P

NUCLEAR REGULATORY COMMISSION

[NRC–2018–0176]

Proposed Revisions to Standard Review Plan Section 2.4.6, Tsunami Hazards; Section 2.4.9, Channel Migration or Diversion; and Section 2.3.3, Onsite Meteorological Measurements Program

AGENCY: Nuclear Regulatory Commission.

ACTION: Standard review plan-draft section revision; request for comment.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is soliciting public comment on proposed updates to NUREG–0800, ''Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition'' (or SRP). The staff is proposing changes to a select number of sections of SRP Chapter 2 taking into account some of the lessons-learned from the flooding hazard re-evaluations performed by the operating power reactor fleet. Specific changes are being proposed to Section 2.4.6, ''Tsunami Hazards''; Section 2.4.9, ''Channel Migration or Diversion''; and Section 2.3.3, ''Onsite Meteorological Measurements Program''.

DATES: Comments must be filed no later than October 29, 2018. Comments received after this date will be considered, if it is practical to do so, but the Commission is able to ensure consideration only for comments received on or before this date.

ADDRESSES: You may submit comments by any of the following methods:

- *Federal Rulemaking website:* Go to *http://www.regulations.gov* and search for Docket ID NRC–2018–0176. Address questions about NRC dockets to Jennifer Borges; telephone: 301–287–9127; email: *Jennifer.Borges@nrc.gov.* For technical questions, contact the individual(s) listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.
- *Mail comments to:* May Ma, Office of Administration, Mail Stop: TWFN–7–A60M, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001.

For additional direction on obtaining information and submitting comments, see ''Obtaining Information and Submitting Comments'' in the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Mark D. Notich, Office of New Reactors, telephone: 301–415–3053; email: *Mark.Notich@nrc.gov;* U.S. Nuclear Regulatory Commission, Washington DC 20555–0001.

SUPPLEMENTARY INFORMATION:

I. Obtaining Information and Submitting Comments

A. Obtaining Information

Please refer to Docket ID NRC–2018–0176 when contacting the NRC about the availability of information for this action. You may obtain publicly-available information related to this action by any of the following methods:

- *Federal Rulemaking website:* Go to *http://www.regulations.gov* and search for Docket ID NRC–2018–0176.
- *NRC's Agencywide Documents Access and Management System (ADAMS):* You may obtain publicly-available documents online in the ADAMS Public Documents collection at *http://www.nrc.gov/reading-rm/adams.html.* To begin the search, select ''*Begin Web-based ADAMS Search.*'' For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1–800–397–4209, 301–415–4737, or by email to *pdr.resource@nrc.gov.* For the convenience of the reader, instructions about obtaining materials referenced in this document are provided in the ''Availability of Documents'' section.
- *NRC's PDR:* You may examine and purchase copies of public documents at the NRC's PDR, Room O1–F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

B. Submitting Comments

Please include Docket ID NRC–2018–0176 in your comment submission. The NRC cautions you not to include identifying or contact information that you do not want to be publicly disclosed in your comment submission. The NRC will post all comment submissions at *http://www.regulations.gov* as well as enter the comment submissions into ADAMS. The NRC does not routinely edit comment submissions to remove identifying or contact information.

If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying or contact information that they do not want to be publicly disclosed in their comment submission. Your request should state that the NRC does not routinely edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment into ADAMS.

II. Background

In connection with the current update to the SRP hydrology chapter, the staff is proposing to place greater emphasis on reviewing the flood-causing mechanism (or mechanisms) consequential to defining the site characteristic for flooding. Consistent with the Commission's policy approach to risk-informed regulation, the updates the staff is proposing will support a simplified review by staff of flood-causing mechanisms determined to not pose a threat to the safe operation of a nuclear power plant. The staff proposes making additional revisions to some of the remaining SRP sections in Chapters 2.3 and 2.4 in the next fiscal year. The scope of these revisions and a timetable for updates would be discussed at a public meeting later this calendar year. In addition, the staff is looking to apply the type of risk-informed approach used in the SRP Sections 2.3 and 2.4 in other SRP sections in the future. Additional meetings will be scheduled in FY19 to discuss specific revisions to the remaining SRP sections in Chapters 2.3, 2.4, and/or other SRP sections. The current update cycle for NRC's SRP Chapter 2.4 on hydrology coincides with the NRC staff's recent completion of its reviews of section 50.54(f) of title 10 of the *Code of Federal Regulations* (10 CFR), flooding hazard re-evaluations performed by the operating power reactor fleet in response to the Fukushima—Dai-ichi nuclear power plant accident. A key focus of the flood hazard re-evaluations was to determine whether the current design basis flood elevation had been exceeded based on the hazard re-evaluations. The flood-causing mechanisms examined in connection with the flood hazard re-evaluations correspond implicitly to review areas currently found in Chapter 2.4 of the SRP for license applications to construct new nuclear power plants. The flood-causing mechanisms that were examined either alone or in combination included:

1. Local Intense Precipitation and Associated Drainage
2. Streams and Rivers
3. Failure of Dams and Onsite Water Control/Storage Structures
4. Storm Surge
5. Seiche
6. Tsunami
7. Ice-Induced
8. Channel Migrations or Diversions

In its March 12, 2012, 10 CFR 50.54(f) letter to operating reactor licensees[1], the NRC staff requested that licensees reevaluate all flood-causing hazards for their respective sites using present-day methods and regulatory guidance used by the NRC staff when reviewing applications for early site permits (ESPs) and combined licenses (COLs). In connection with those flood hazard re-evaluations, licensees were to address information on the flood event duration associated with the respective flood hazards, which included warning times necessary to take preventive measures, the expected duration of site

[1] Letter from Michael R. Johnson, Director, Office of New Reactors, to All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status, March 12, 2012 (ADAMS Accession No. ML12053A340).

inundation, and flood recession times until unimpeded site access could be restored. Licensees were also to estimate the effects associated with the respective consequential flood-causing mechanisms being investigated, such as hydrostatic and hydrodynamic loads, water velocities, potential for erosion, and other parameters. In response to the March 12, 2012, 10 CFR 50.54(f) flood information request, hazard re-evaluations at approximately 60 operating reactor sites were submitted by licensees. In most cases, licensees reported that local intense precipitation (LIP) in addition to one or more other flood-causing mechanisms could be consequential enough to exceed the level (water surface elevation) of the current design basis flood. Following a review of the information provided, the staff identified which flood-causing mechanisms were consequential for defining, and in some cases redefining, the design basis flood for each of the operating nuclear power plants covered by the 10 CFR 50.54(f) flooding reviews.[2]

The staff is now proposing changes to Chapter 2.4 of the SRP taking into account some of the lessons-learned from the 10 CFR 50.54(f) flooding reevaluation reviews as well as the ESP/COL reviews. For example, where simplified analytical (manual) solutions were performed decades ago and prior to the widespread availability of digital computers, licensees are now relying on more-detailed numerical models to perform these very same calculations. It was also learned that licensees made extensive use of geo-spatial databases in connection with those computer simulations. Through these efforts, many of the licensees submitted flood inundation maps for the first time comparing the elevations of the power plant site and as-built structures with the water surface elevations produced by the respective flood-causing mechanisms.

Another key lesson-learned was that a majority of the sites had multiple re-evaluated flooding hazards in excess of the design basis previously used in licensing. In particular, the majority of the exceedances were associated with LIP, which was a flooding hazard not generally evaluated as part of the original design basis for several of the operating-reactor sites. Previously, it was assumed that the consequences of LIP would be addressed by a combination of site grading and some type of storm water management system integrated into the site's drainage design. In many cases it was found that earlier design decisions underestimated the effects of LIP and associated drainage on structures, systems, and components (SSCs) important to safety. Consequently, the staff intends to propose that one of the current SRP chapters be repurposed (SRP Section 2.4.2—''Floods'') to specifically focus on evaluating the effects of LIP and associated site drainage.

III. Discussion of Update Rationale by SRP Section

In the past the Commission has adopted the concept of the ''probable maximum event'' when estimating the design bases for nuclear power plants. The probable maximum event, which is determined by accounting for the physical limits of a natural phenomenon, is considered to be the most severe event reasonably (physically) possible at the location of interest and is thought to exceed the severity of all historically-observed events. The concept of ''probable maximum event'' is consistent with General Design Criterion (GDC) 2 of Appendix A (''*General Design Criteria for Nuclear Power Plants*'') to CFR part 50 (''Domestic Licensing of Production And Utilization Facilities'') which requires that nuclear power plant SSCs important to safety be designed to withstand the most severe effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their intended safety functions.

The Commission's reactor siting criteria at 10 CFR 100.20(c)(3) calls for the estimation of the ''. . . maximum probable flood [PMF] . . . using historical data.'' Floods (or flooding), corresponding to the hypothetical PMF, is thus one of the *site characteristics*[3] to be evaluated in the context of GDC 2. Historically, the PMF at a nuclear power plant has been estimated based on some plausible maximum water surface elevation that would occur across the footprint of the power plant site in relation to the elevations of SSCs important to safety. As noted below, the staff is now proposing to expand the flood hazard definition to more explicitly address what is meant by associated flooding effects and the flood event duration.

The focus of the hydrology reviews in Chapter 2.4 has always been to review and assess applications for the potential flood elevations at the site for the purposes of designing SSCs important to safety. Having reviewed the various flood-causing mechanisms listed in Chapter 2.4, applicants for new power reactors have historically selected the flood-causing mechanism (or mechanisms) consequential to defining the flood elevation site characteristic. The results of that decision-making by the applicant were documented in the Safety Analysis Report (SAR). In many cases, the SAR documentation would be extensive, irrespective of whether the flooding hazard in question was consequential to defining the site characteristic flood. The staff observed that licensees still adhered to this practice in their responses to the staff's recent 10 CFR 50.54(f) flood reevaluation request.

In connection with the current update to the SRP hydrology chapter, the staff has decided to place greater emphasis in its SER on reviewing the flood-causing mechanism (or mechanisms) consequential to defining the site characteristic for flooding. In August 1995, the Commission issued a *Policy Statement* concerning the use of probabilistic risk assessment (PRA) methods. In that *Policy Statement,* the Commission stated that the use of those methods should be ''. . . increased to the extent supported by the state of the art in PRA methods and data, and in a manner that complements the NRC's deterministic approach and supports the NRC's traditional defense-in-depth philosophy. . . .'' (60 FR 42628). Consistent with the Commission's policy, the staff is now proposing to simplify the SER review requirements by focusing on those flood-causing mechanisms determined to pose a threat to the safe operation of a nuclear power plant. In conducting its review of the 10 CFR 50.54(f) flood hazard re-evaluations submitted by licensees, the staff found that consequences (location, magnitude, duration, timing) of a flooding event within the reactor powerblock could vary depending on the particular flood-causing mechanism under consideration. In light of this observation, it is now being proposed that only those mechanisms producing a *consequential flood* (defined in the appendix included in this document) at the site in question would be reviewed in detail in the SER. Under this

[2] In parallel with the March 12, 2012, 10 CFR 50.54(f) flooding request, the NRC staff were also in the process of reviewing a handful of ESPs and COLs for new operating power reactors. In connection with those reviews, the licensees also evaluated the potential for flooding consistent with guidance found in the SRP.

[3] Section 52.1(a) defines *site characteristics* ''. . . as the actual physical, environmental and demographic features of a site. Site characteristics are specified in an early site permit or in a final safety analysis report for a combined license. Site characteristics are specified in an early site permit or in a final safety analysis report for a combined operating license.'' (63 FR 1897) The staff considers the identification of flooding hazards, such as tsunamis, as one of the physical features of the site to be described in an ESP or COL.

proposal, applicants would still be required to perform their due diligence and evaluate all flood-causing mechanisms described in the SRP against GDC 2. However, only those flood-causing mechanisms found to be instrumental in identifying consequential flooding at a site would be subject to a detailed regulatory review in the SER.

In identifying consequential flooding, the staff would review and assess flood inundation and topographic maps for those consequential flood-causing mechanisms, if available. The staff's review would focus primarily on the flood-causing mechanism (or mechanisms) found to be consequential for the purposes of defining the site characteristic flood elevations. Similarly, the detailed discussion contained in the SER would focus primarily on those identified consequential flood-causing mechanisms, including LIP. With this change in emphasis, the SER discussions for those inconsequential flood-causing mechanisms would not need to be fully developed because they are not relevant to defining the site characteristic flood elevations. The only exception to this proposal is LIP. As mentioned above, LIP occurs at all reactor sites, and in many cases was found to exceed the current design basis as part of the recent 10 CFR 50.54(f) flood reevaluation request.

Generic Flooding Changes Proposed to SRP Chapter 2.4

There are several areas for which the staff seeks public comment on the generic changes now being proposed to Chapter 2.4 of the SRP. To determine the bounding flood causing mechanism consequential to defining the site characteristic flood, the staff will review and assess which flood-causing mechanisms are physically plausible and capable of inundating SSCs important to safety at the site. For some sites, based on the physical geography, certain flood-causing mechanisms may be eliminated from consideration by virtue of being located at inland locations well away from large bodies of water such as an ocean or large lake. Such sites would not be expected to be threatened by the effects of storm surge or tsunamis of marine origin. Still other sites might be located in Mediterranean or Subtropical climatic settings for which average daily temperatures do not drop below the freezing point of water and thus may not be susceptible to ice effects. Lastly, some sites might be located adjacent to large inland lakes or the open coast for which there is an absence of rivers or streams; such sites can be expected to be free from flooding due to riverine-based events. Hence, the need for water surface elevation estimates within the reactor powerblock due to these flooding mechanisms would be obviated. However, there could be a scenario in which a proposed reactor site might be vulnerable to flooding by multiple scenarios; for example, a site located in a watershed occupied by multiple upstream dams of different impoundment volumes and distances from the reactor site. The timing and sequencing of the failure of any of these dams could result in significantly different inundation depths at the site in question. As a result, all potential flooding scenarios need to be examined and considered in detail to calculate the site's inundation map, associated effects, and flood event duration for those consequential (bounding) flood-causing mechanisms.

As illustrated by the examples described above, the staff's proposed detailed review of the hydrology portion of the application would focus primarily only on those flood-causing mechanisms, including LIP, which could result in consequential flooding at a reactor site. Under such an approach, the staff may also need to review multiple scenarios for the same flood-causing mechanism to determine which scenario is the bounding flooding event. The staff intends to review and assess inundation maps to assure that they are prepared consistent with Federal standards for inundation mapping, such as the Federal Emergency Management Agency (FEMA) Publication 64–P, entitled ''Federal Guidelines for Dam Safety: Emergency Action Planning for Dams'' [4].

The staff also proposes to expand the flood hazard PMF definition to include associated flooding effects and the flood event duration and reduce the use of terms in the respective SRP chapters such as ''maximum,'' ''probable maximum,'' and ''PMF'' when referring to flood-causing mechanisms and instead refer to consequential and non-consequential flood-causing mechanisms. As part of staff's recent 10 CFR 50.54(f) flood reevaluation, staff noted the terms ''maximum,'' or ''probable maximum,'' could be misinterpreted since these terms refer to deterministic methodologies that are not frequency based. In addition, staff continues to pursue probabilistic flood hazard analysis (PFHA) methodologies, and removal of staff's discussion of maximum flood elevation is aligned with this pursuit.

[4] Available on-line at *https://www.fema.gov/technical-manuals-and-guides.*

The term ''safety-related SSCs'' is being replaced with the term ''SSCs important to safety'' to better track with the definition of that phrase currently found in Appendix A to 10 CFR part 50 of the Commission's regulations.

The staff is also proposing to introduce a glossary of some standard flooding terms to avoid confusion between applicants and the NRC staff when communicating on certain flooding concepts. A tentative list of those concepts and their definitions is included as an appendix to this document. Some of these definitions have been previously published by the Nuclear Energy Institute (NEI) and used by the NRC staff with the recent 10 CFR 50.54(f) flood reevaluation. Included in the list of terms is a proposed definition for ''consequential flooding.'' Public comment on these concepts and definitions is welcomed as the staff intends to propose that they will be added to an update of SRP Section 2.4.1 (''Hydrologic Description'') at a later date.

Lastly, other generic changes proposed to SRP Chapter 2.4 include technical editing, as appropriate, to improve the readability of the various SRP sections as well as to better convey lessons-learned from the recent 10 CFR 50.54(f) flooding reviews. For example, among the lessons-learned was the need to re-organize and update the ''References'' Section (Section VI) to the respective SRP sections.

Proposed Future Changes to SRP Chapter 2.4 Sections

The staff plans on making additional revisions to the remaining SRP sections in Chapter 2.4 next fiscal year (FY19) based on the lessons-learned from the 10 CFR 50.54(f) and ESP/COL flooding reviews. The scope of these future revisions is consistent with the generic revisions described above (*e.g.,* focus on descriptions of the consequential mechanism(s), preparation of inundation maps, updating of references, etc.). In addition to the generic changes being proposed, the staff also plans specific changes to other SRP sections as described below.

Hydrologic Description—SRP Section 2.4.1: The staff intends to propose in the future that this SRP section be re-written to place increased emphasis on differentiating between consequential and inconsequential flood-causing mechanisms. Consequential flood-causing mechanism (or mechanisms), including LIP, that would be used to define the site characteristic for design-basis flooding, will continue to be fully-developed in the appropriate hazard-mechanism specific section of Chapter

2.4. However, staff will propose that the discussion for those inconsequential flood-causing mechanisms at the site does not need to be fully developed in a hazard-specific section of Chapter 2.4. Documentation of inconsequential mechanisms can be simplified because they were found to be not relevant to defining the site characteristic flood elevations for SSCs important-to-safety. Applicants would still be expected to account for the effects of plausible combined event hazards when describing the flood-causing mechanism (or mechanisms) consequential for defining the site characteristic for flooding. SRP Section 2.4.1 currently requests detailed discussions of the hydrosphere without clear acceptance guidelines. Staff will propose that topics not directly associated with defining the flooding site characteristic, and hence the staff's safety conclusion, no longer be required for the FSAR.[5] A glossary of terms (attached as an appendix to this notice) would be added to the document.

Floods—SRP Section 2.4.2: The staff intends to propose in the future that this SRP section be re-purposed to focus on defining the characteristic flood due to LIP and associated site drainage in and around the powerblock and controlled area. All applicants would be expected to prepare a flood inundation map for their sites showing the effects of LIP. Depending on a site's climate, applicants may need to consider different types of storms, including general and tropical storms, to obtain a bounding LIP value for a precipitation event that produces plausible maximum associated flooding effects and flood event duration, in addition to water level variations. If applicants choose to rely on a site-specific precipitation estimate from sources other than the *Hydrometeorological Reports* (or HMRs) prepared by the National Weather Service,[6] then the staff would describe how those site-specific estimates would be reviewed. Review instructions for riverine-based floods currently in this section would be migrated into Section 2.4.3 (''Streams and Rivers'').

Groundwater—SRP Section 2.4.12: The staff intends to propose in the future that this SRP section will be updated based on the experience gained through the review of the recent design certification (DC)/ESP/COL applications. The main purpose of this SRP section is to establishing the future maximum groundwater elevations associated with the reactor site and its environs. In examining the water table, this section also discusses the pathway and travel time of potential plumes containing radionuclide contaminants. In connection with any radionuclide fate and transport analysis, the staff must consider the effects of any geotechnical backfill used during site construction on groundwater flow. The review activities associated with the specific engineering properties of backfill are reviewed in SRP Section 2.5.4, ''Stability of Subsurface Materials and Foundations.'' Review activities associated with the groundwater monitoring programs required by the regulations would be incorporated into one section describing groundwater use and characteristics, aquifers, pathways and, radionuclide fate and transport scenarios in SRP Section 2.4.13, ''Accidental Releases of Radioactive Liquid Effluents in Ground and Surface Water.'' Content from DC/COL–ISG–014, ''Assessing the Radiological Consequences of Accidental Releases of Radioactive Materials from Liquid Waste Tanks in Ground and Surface Waters for Combined License Applications,'' would be incorporated into this new SRP section.

Probabilistic Flood Hazard Analyses in the SRP

Following publication of the 1995 PRA *Policy Statement,* the Advisory Committee on Reactor Safeguards and the Advisory Committee on Nuclear Waste prepared a White Paper defining certain PRA-related terms. In that White Paper, designated SECY–98–144, the two NRC Advisory Committees defined what was meant by a *risk-informed, performance-based approach.* A *risk-informed approach* was defined to be a regulatory decision-making philosophy whereby risk insights are considered together with other factors to establish requirements that better focus licensee and regulatory attention on design and operational issues commensurate with their importance to health and safety. A risk-informed approach enhances the traditional approach by: (a) Allowing explicit consideration of a broader set of potential challenges to safety, (b) providing a logical means for prioritizing these challenges based on risk significance, operating experience, and/or engineering judgment, (c) facilitating consideration of a broader set of resources to defend against these challenges, (d) explicitly identifying and quantifying sources of uncertainty in the analysis, and (e) leading to better decision-making by providing a means to test the sensitivity of the results to key assumptions. Where appropriate, a risk-informed regulatory approach can also be used to reduce unnecessary conservatism in deterministic approaches, or can be used to identify areas with insufficient conservatism and provide the bases for additional requirements or regulatory actions.

SECY–98–144 also noted that the Commission's regulations requirements that are either prescriptive or *performance-based.* A prescriptive requirement specifies particular features, actions, or programmatic elements to be included in the design or process, as the means for achieving a desired objective. A performance-based requirement relies upon measurable (or calculable) outcomes (*i.e.,* performance results) to be met, but provides more flexibility to the licensee as to the means of meeting those outcomes.

Risk-informed, performance-based approaches are becoming more widespread in regulatory decision-making owing to improved methods, models, and approaches. Probabilistic seismic hazard analysis is just one example that has been in use in regulatory applications since the early 1980s. As the staff prepares updates to Chapter 2.4 of the SRP in FY19, the staff intends to seek stakeholder views on review methods and acceptance criteria that might be appropriate for implementation in the context of probabilistic flood hazard analyses for nuclear power plants. Later in FY19, the staff will issue a second **Federal Register** Notice announcing a public meeting on this topic to be held in connection with additional SRP updates for Chapter 2.4.

Specific Changes to Chapter 2.4 SRP Sections Covered in This Document

In light of the new review philosophy envisioned for future license applications (as described above), the staff seeks public comment on other specific revisions proposed in the following SRP chapters. Electronic copies of these SRP chapters are available through the NRC's Agencywide Documents Access and Management System (ADAMS), at *http://www.nrc.gov/reading-rm/adams.html,* under the ADAMS accession numbers indicated below along with a summary of the section-specific changes.

Tsunami—SRP Section 2.4.6 (ADAMS Accession No. ML18190A200): New language has been proposed to this SRP section reflecting the nuances of the recently-completed 10 CFR 50.54(f) flooding reviews (for example, the potential for multiple water surface elevations across the reactor site due to

[5] This information would still be called for in any EIS/EA prepared for the site as currently required by 10 CFR part 51.

[6] Available on-line at *http://nws.noaa.gov/oh/hdsc/studies/pmp.html.*

variable site topography; the need to account for impact of combined hazard effects on estimated water surface elevations; consideration of the impact of associated effects on the design of SSCs important to safety; etc.). The reference list has also been amended to now only cite the Commission's regulations as well as those NRC regulatory guides pertinent to the tsunami review. The staff made this decision taking into account two factors. The first is that approximately 20 licensees recently completed tsunami-based flood evaluations in connection with the 10 CFR 50.54(f) request. The respective analyses were computer-based and reflected an up-to date knowledge of tsunami wave science as well as associated generating mechanisms. The second factor is that the staff intends to prepare a knowledge management document in the future that will summarize the results of those 10 CFR 50.54(f) reviews bearing on tsunami risk. That knowledge management document will also address current scientific literature on the subject and will include a summary of NRC-sponsored tsunami research produced over the last decade.

Channel Migration or Diversions—SRP Section 2.4.9 (ADAMS Accession No. ML18190A201): New language placing increased emphasis on the use of spatial data sets has been proposed for this SRP section. There are new recommendations encouraging the reviewer to consult aerial and satellite imagery that is now widely available. When reviewed in time series, temporal changes in the locations of streams and/or rivers can confirm whether this flood-causing mechanism is present at a particular site. Additional language has also been added to reflect the staff's intent that if a site is found to be susceptible to flooding due to channel migration or diversion, the applicant would then need to review this flood-causing mechanism in the context of a riverine-type flood, as outlined in SRP Section 2.4.3 (''Streams and Rivers''). Lastly, the reference list has also been limited to essentially citing the Commission's regulations as well as those NRC regulatory guides pertinent to the channel migration or diversion review.

Specific Changes to SRP Chapter 2.3 (''Meteorology'') Section Covered in This Document

A revision to SRP Section 2.3.3 (''Onsite Meteorological Measurement Programs'') is also being proposed that captures lessons-learned from the staff's review of DC, ESP, and COL applications received during the previous decade.

Changes to SRP Section 2.3.3 were made to update the text with editorial and clarifying statements, including utilizing consistent terminology within this SRP section and within planned updates to the other SRP Chapter 2.3 sections. For example, the term ''atmospheric diffusion'' was replaced with ''atmospheric dispersion'' because atmospheric dispersion is generally recognized as having two components: Transport and diffusion. The term ''atmospheric stability class'' was also replaced with ''atmospheric stability'' due to the recognition that newer atmospheric dispersion models may be using direct measurements of atmospheric turbulence instead of classifying atmospheric stability into seven district classes as is currently discussed in Regulatory Guide 1.23, Revision 1.[7] Previous standard boiler-plate statements in the SRP that are not applicable to this SRP section were also eliminated and the suite of references were updated as well.

The staff plans on making additional revisions to some of the remaining SRP sections in Chapter 2.3 in the next fiscal year.

The staff intends to conduct a public meeting later this calendar year to discuss the changes being proposed to SRP Chapters 2.3 and 2.4. The timing and location of that public meeting will be announced in the **Federal Register** at a later date.

IV. Further Information

In addition to the lessons-learned from the section 50.54(f) reviews, the changes proposed to SRP Chapter 2 also reflect the current staff reviews, methods, and practices based on lessons-learned from the NRC's reviews of design certification and combined license applications completed since the last revision of this chapter.

Following NRC staff evaluation of public comments, the NRC intends to finalize SRP Sections 2.4.6, 2.4.9, and 2.3.3 in ADAMS and post it on the NRC's public website at *http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0800/*. The SRP is guidance for the NRC staff. The SRP is not a substitute for the NRC regulations, and compliance with the SRP is not required.

V. Backfitting and Issue Finality

Issuance of this draft SRP section, if finalized, would not constitute backfitting as defined in 10 CFR 50.109, (the Backfit Rule) or otherwise be inconsistent with the issue finality provisions in 10 CFR part 52. The NRC's position is based upon the following considerations.

1. The draft SRP positions, if finalized, would not constitute backfitting, inasmuch as the SRP is internal guidance to NRC staff directed at the NRC staff with respect to their regulatory responsibilities.

The SRP provides internal guidance to the NRC staff on how to review an application for NRC regulatory approval in the form of licensing. Changes in internal staff guidance are not matters for which either nuclear power plant applicants or licensees are protected under either the Backfit Rule or the issue finality provisions of 10 CFR part 52.

2. The NRC staff has no intention to impose the SRP positions on current licensees or already-issued regulatory approvals either now or in the future.

The NRC staff does not intend to impose or apply the positions described in the draft SRP to existing (already issued) licenses and regulatory approvals. Hence, the issuance of a final SRP, even if considered guidance within the purview of the issue finality provisions in 10 CFR part 52, would not need to be evaluated as if it were a backfit or as being inconsistent with issue finality provisions. If, in the future, the NRC staff seeks to impose a position in the SRP on holders of already issued licenses in a manner that does not provide issue finality as described in the applicable issue finality provision, then the staff must make the showing as set forth in the Backfit Rule or address the criteria for avoiding issue finality as described in the applicable issue finality provision.

3. Backfitting and issue finality do not—with limited exceptions not applicable here—protect current or future applicants.

Applicants and potential applicants are not, with certain exceptions, protected by either the Backfit Rule or any issue finality provisions under 10 CFR part 52. This is because neither the Backfit Rule nor the issue finality provisions under 10 CFR part 52—with certain exclusions discussed below—were intended to apply to every NRC action that substantially changes the expectations of current and future applicants.

The exceptions to the general principle are applicable whenever an applicant references a 10 CFR part 52 license (*e.g.,* an early site permit) and/or NRC regulatory approval (*e.g.,* a design certification rule) with specified issue finality provisions. The NRC staff

[7] Entitled ''Meteorological Monitoring Programs for Nuclear Power Plants.''

does not, at this time, intend to impose the positions represented in the draft SRP in a manner that is inconsistent with any issue finality provisions. If, in the future, the staff seeks to impose a position in the draft SRP in a manner which does not provide issue finality as described in the applicable issue finality provisions, then the staff must address the criteria for avoiding issue finality as described in the applicable issue finality provision.

VI. Availability of Documents

The documents identified in the following table are available to interested persons through the following methods, as indicated.

Document	ADAMS Accession No.
Draft NUREG–0800, Section 2.4.6, ''Tsunami Hazards''	ML18190A200
Current Revision of NUREG–0800, Section 2.4.6, ''Tsunami Hazards''	ML070160659
Draft revision to NUREG–0800, Section 2.4.9, ''Channel Migration or Diversion''	ML18190A201
Current revision to NUREG–0800, Section 2.4.9, ''Channel Migration or Diversion''	ML070730434
The redline-strikeout version comparing the Revision 4 of Draft NUREG–0800, Section 2.4.6, ''Tsunami Hazards'' and the current version of Revision 3	ML18267A055
The redline-strikeout version comparing the draft Revision 4 of Draft revision to NUREG–0800, Section 2.4.9, ''Channel Migration or Diversion'' and the current version of Revision 3	ML18264A035
Draft NUREG–0800, Section 2.3.3, ''Onsite Meteorological Measurements Program''	ML18183A446
Current Revision NUREG–0800, Section 2.3.3, ''Onsite Meteorological Measurements Program''	ML063600394
The redline-strikeout version comparing the draft Revision 4 of Draft revision to NUREG–0800, Section 2.3.3, ''Onsite Meteorological Measurements Program'' and the current version of Revision 3	ML18267A076

Dated at Rockville, Maryland, this 25th day of September, 2018.

For the Nuclear Regulatory Commission.

Jennivine K. Rankin,

Acting Chief, Licensing Branch 3, Division of Licensing, Siting and Environmental Analysis, Office of New Reactors.

APPENDIX: Proposed Definitions

- *Active flood protection feature:* A flood protection feature that requires the change of a component's state in order for it to perform as intended. Examples include sump pumps, portable pumps, isolation and check valves, flood detection devices (*e.g.,* level switches), and flood doors (*e.g.,* watertight doors).
- *Associated effects:* Defined to include those factors such as wind waves and run-up effects; hydrostatic loading; hydrodynamic loading, including debris and water velocities; effects caused by sediment deposition and erosion; concurrent site conditions, including adverse weather conditions; and groundwater ingress.
- *Cliff-edge effect:* A relatively-large increase in the safety consequences due to a relatively small increase in flood severity (*e.g.,* flood height (elevation), associated effects, or flood event duration).
- *Concurrent hazard:* A hazard that occurs along with the occurrence of another hazard as a result of a common cause (*e.g.,* local intense precipitation and/or riverine flood event concurrent with a storm surge event caused by the same hurricane).
- *Consequential flooding:* For Construction Permits, Operating Licenses, and COL applications, a term used to identify conditions in which the flood severity exceeds the capability of protection features (if available), including considerations for flood level, duration and/or associated effects, such that SSCs important-to-safety may be impacted. For ESP applications, the flood severity is expected to be in reference to the site characteristic flood. Consequential flooding may occur for events that are less severe and with differing characteristics (*e.g.,* shorter warning time) than the deterministically defined probable maximum events.
- *Flood event duration:* Defines the length of time that a flood event affects the site. Flood event duration typically begins with conditions being met for entry into a flood procedure or notification of an impending flood and end when the plant is in a safe and stable state. It typically includes site warning time (or preparation time, if available) and period of inundation and recession.
- *Flood hazard:* Those hydrometeorologic, geoseismic, or structural failure phenomena (or combination thereof) that may produce flooding at or near nuclear power plant site.
- *Flood-response SSCs:* SSCs that may be used to maintain key safety functions during conditions that might occur during an external flood scenario, including SSCs that are indirectly related to maintenance of key safety functions (*e.g.,* barriers that protect SSCs from floodwaters or other related effects).
- *Local intense precipitation (LIP):* A locally-heavy rainfall event, which is typically defined by specifying three parameters: Total rainfall depth, total rainfall duration, and spatial extent (area). LIP is typically associated with small-scale events over geographic areas on the scale of the reactor powerblock and the controlled area (typically on the order of one to ten mi^2) and using an assumption that the short-term rainfall rate is aerially uniform although the rainfall rate (intensity) typically varies over the total rainfall event duration. Although the rainfall duration parameter selected as part of evaluating this flood-causing mechanism will depend on site-specific characteristics (*e.g.,* site drainage, susceptibility to ponding of water, etc.), LIP events are typically associated with a relatively short duration (*e.g.,* 1- to 6-hrs) of intense rainfall compared to the duration of rainfall events applied to the evaluation of basin-wide flooding involving streams and rivers. Smaller-scale intense rainfall events may be imbedded within longer rainfall events for streams and rivers and, depending on site drainage characteristics, may affect a reactor site for longer durations. In the context of the Standard Review Plan, LIP is defined generically and is not limited to stylized deterministic events, such as the so-called 1-hr, 1- mi^2, probable maximum precipitation (PMP) event with specified duration and temporal distribution that produces the maximum rainfall inundation at a given plant site.
- *Passive flood protection feature:* A flood protection feature that does not require the change of state of a component in order for it to perform as intended. Examples include dikes, berms, sumps, drains, basins, yard drainage systems, walls, floors, structures, penetration seals, and barriers exterior to the immediate plant area that is under licensee control.
- *Powerblock elevation* (for purposes of plant design and flood hazard assessment): The as-built elevation of the ground surface in the area of the site's powerblock.

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NUCLEAR REGULATORY COMMISSION

Meeting of the Advisory Committee on Reactor Safeguards (ACRS) Subcommittee on Structural Analysis

The ACRS Subcommittee on Structural Analysis will hold a meeting on October 3, 2018, at 11545 Rockville Pike, Room T–2B1, Rockville, Maryland 20852.

The meeting will be open to public attendance. The agenda for the subject meeting shall be as follows:

Wednesday, October 3, 2018—1:00 p.m. Until 4:00 p.m.

The Subcommittee will review the Nuclear Regulatory Commission (NRC) Office of Nuclear Regulatory Research report NUREG/CR–7237, ''Correlation of Seismic Performance in Similar SSCs (Structures, Systems, and