



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 5, 2018

MEMORANDUM TO: FILE

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Environmental Review and NEPA Branch
Division of Materials and License Renewal
Office of Nuclear Reactor Regulation

SUBJECT: LICENSE RENEWAL AND SUBSEQUENT LICENSE RENEWAL
ENVIRONMENTAL REVIEW GUIDELINES

The review of license renewal and subsequent license renewal (SLR) applications involves significant U.S. Nuclear Regulatory Commission (NRC) resources, and the number of applications and their submission dates greatly impact planning processes. The Division of Materials and License Renewal (DMLR) Environmental Review and National Environmental and Policy Act Branch developed the guidelines enclosed with this memorandum to support and optimize the environmental review of future license renewal and SLR applications.

Enclosure 1 discusses the environmental requirements and guidance changes since the staff completion of many initial license renewal reviews. Enclosure 2 discusses the license renewal environmental review lessons learned that served as a basis to optimize the review of SLR applications. Enclosure 3 discusses the SLR application environmental review focus areas. Enclosure 4 provides a generic list of documents for an environmental review support portal.

Please communicate any questions to the Environmental Review and National Environmental and Policy Act Branch Chief.

ENCLOSURES:

1. Requirements and Guidance Changes Since Initial License Renewals
2. Lessons Learned to Optimize License Renewal Application Reviews - Environmental
3. Essential Environmental Issues for SLR Applicants
4. Generic List of Documents for an Environmental Review Support Portal

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Requirements and Guidance Changes Since Initial License Renewals

NRC National Environmental Policy Act Framework for Reviewing Subsequent License Renewal Applications

Major Regulatory Changes in the NRC's Environmental Review Process for License Renewal

The NRC issued the Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants, NUREG-1437, in 1996 for the review of license renewal applications. The GEIS findings are codified in 10 CFR Part 51, Subpart A, Appendix B, Table B-1 (61 FR 28467, June 5, 1996). Category 1 issues have generic conclusions that are applicable for all plants. Category 2 issues require site-specific analyses and conclusions in site-specific Supplemental Environmental Impact Statements (SEIS) for each application. There are 92 issues in the 1996 GEIS (23 issues are Category 2). In 2013, the NRC published GEIS revision 1 and codified it in a 10 CFR Part 51 revision (78 FR 37282 and 78 FR 46255). The final rule incorporates knowledge gained from past reviews. In the revised rule, Table B-1 lists 78 issues (17 are Category 2). Some of the earlier 92 issues were consolidated or grouped due to the related nature of the impacts, while new issues were added (see Table 1 below).

Changes in the Structure and Organization of the GEIS and NRC Supplemental EISs

The 1996 GEIS presented impacts organized around plant systems (e.g., cooling systems, transmission lines) and activities (e.g., refurbishment). The 2013 GEIS adopts a National Environmental Policy Act (NEPA) resource-based approach to present impacts where all components of the proposed action and alternatives are presented for each resource area.

SEISs prepared by the NRC staff before the publication of the 2013 GEIS followed the pattern of the 1996 GEIS, where the recent SEISs follow the pattern of the 2013 GEIS.

Changes in NRC Guidance to Applicants for License Renewal

Along with the issuance of the 2013 rule and GEIS, the NRC published updated guidance to applicants for the preparation of environmental reports (ERs), which are submitted as part of the license renewal applications for a nuclear power plant. The updated guidance is in Revision 1 to Regulatory Guide 4.2, Supplement 1, "Preparation of Environmental Reports for Nuclear Power Plant License Renewal Applications."

Additional Needs/Considerations for Subsequent License Renewal (SLR)

- Applicant ERs need to address any known new and significant information regarding the environmental impacts of continued operations, for all Category 1 and Category 2 issues in the applicant ERs and evaluated in the NRC SEISs for initial license renewal.
- Applicant ERs should provide current/renewed discussion of the affected environment for all resource areas. [Note, ERs submitted as part of initial LRAs as well as associated NRC SEISs are unlikely to provide the needed current information specified by RG 4.2, S1].
- For new Category 1 issues (see Table 1 below), applicant ERs need to identify any new and significant information.

- For new Category 2 issues (see Table 1 below), applicant ERs must contain environmental analyses in accordance with 10 CFR 51.45 and 51.53 (e.g., analyses of the environmental impacts of the proposed action, including any supporting refurbishment, and the impacts of operation during the [subsequent] period of extended operation (PEO)).

Table 1: Changes in Issues from the 1996 GEIS Table B–1 to the 2013 GEIS Revision 1, Categorized by Resource Areas	
1996 GEIS Table B–1 Issues	2013 GEIS Revision 1 Table B–1 Issues
Land Use	
Onsite land use- Category 1 issues	No change from 1996
Offsite land use - refurbishment Category 2 issues	Consolidated into Offsite land use - Category 1 issues
Offsite land use - Category 2 issues	
Power line right-of-way (ROWs) - Category 1 issues	Offsite land use regarding transmission line ROWs - Category 1 issues
Visual Resources (aesthetic)	
Aesthetic impacts - refurbishment Category 1 issues	Consolidated into Aesthetic impact Category 1 issues
Aesthetic impacts - Category 1 issues	
Aesthetic impacts regarding transmission lines - Category 1 issues	
Air Quality	
Impacts on Air quality - refurbishment Category 2 issues (nonattainment and maintenance areas)	Air quality impacts - all plant areas Category 1 issues
Impacts on Air quality - transmission lines Category 1 issues	No change from 1996
Noise	
Noise - Category 1 issues	Noise impacts – Category 1 issues
Geologic Environment	
NA	<u>New issue:</u> Impacts on Geology and soils - Category 1 issues
Surface Water Resources	
Impacts on Surface Water quality - refurbishment Category 1 issues	Combined into Surface water use and quality Category 1 issues (non-cooling system impacts)
Impacts on Surface Water use - refurbishment Category 1 issues	

Table 1: Changes in Issues from the 1996 GEIS Table B–1 to the 2013 GEIS Revision 1, Categorized by Resource Areas	
1996 GEIS Table B–1 Issues	2013 GEIS Revision 1 Table B–1 Issues
Altered current patterns at intake and discharge structures - Category 1 issues	No change from 1996
Altered salinity gradients - Category 1 issues	No change from 1996
Altered thermal stratification of lakes - Category 1 issues	No change from 1996
Scouring caused by discharged cooling water - Category 1 issues	No change from 1996
Discharge of other metals in waste water - Category 1 issues	Discharge of metals in cooling system effluent - Category 1 issues
Discharge of chlorine or other biocides - Category 1 issues	Consolidated into Discharge of biocides, sanitary wastes, and minor chemical spills - Category 1 issues
Discharge of sanitary wastes and minor chemical spills - Category 1 issues	
Water use conflicts - Category 1 issues (plants with once-through cooling systems)	No change from 1996
Surface water use conflicts – Category 2 issues (plants with cooling ponds or cooling towers using make-up water from a small river with low flow)	Surface water use conflicts -Category 2 issues (plants with cooling ponds or cooling towers using makeup water from a river)
NA	<u>New issue:</u> Effects of dredging on surface water quality - Category 1 issues
Temperature effects on sediment transport capacity - Category 1 issues	No change from 1996
Groundwater Resources	
Groundwater use and quality - refurbishment Category 1 issues	Groundwater contamination and use - Category 1 issues (non-cooling system impacts)
Groundwater use conflicts - Category 1 (potable and service water; plants that use <100 gallons per minute (gpm))	No change from 1996
Groundwater use conflicts - Category 2 issues (plants using cooling towers withdrawing makeup water from a small river)	Consolidated into Groundwater use conflicts - Category 2 issues (plants that withdraw more than 100 gpm)

Table 1: Changes in Issues from the 1996 GEIS Table B–1 to the 2013 GEIS Revision 1, Categorized by Resource Areas	
1996 GEIS Table B–1 Issues	2013 GEIS Revision 1 Table B–1 Issues
Groundwater use conflicts - Category 2 issues (Ranney wells)	
Ground-water use conflicts - Category 2 issues (plants using cooling towers withdrawing make-up water from a small river)	Groundwater use conflicts - Category 2 issues (plants with closed-cycle cooling systems that withdraw makeup water from a river)
Groundwater quality degradation - Category 1 issues (Ranney wells)	Consolidated into Groundwater quality degradation resulting from water withdrawals - Category 1 issues
Groundwater quality degradation - Category 1 issues (saltwater intrusion)	
Groundwater quality degradation - Category 2 issues (plants with cooling ponds in salt marshes)	Groundwater quality degradation - Category 1 issues (plants with cooling ponds in salt marshes)
Ground-water quality degradation - Category 2 issues (cooling ponds at inland sites)	No change from 1996
NA	New issue: Radionuclides released to groundwater - Category 2 issues
Terrestrial Resources	
Refurbishment impacts during PEO - Category 2 issues	Effects on terrestrial resources - Category 2 issues (non-cooling system impacts)
NA	New issue: Exposure of terrestrial organisms to radionuclides - Category 1 issues
Cooling pond impacts on terrestrial resources - Category 1 issues	Cooling system impacts on terrestrial resources – Category 1 issues (plants with once-through cooling systems or cooling ponds)
Cooling tower impacts on crops and ornamental vegetation - Category 1 issues	Consolidated into Cooling tower impacts on vegetation - Category 1 issues (plants with cooling towers)
Cooling tower impacts on native plants - Category 1 issues	
Bird collisions with cooling towers - Category 1 issues	Consolidated into Bird collisions with plant structures and transmission lines - Category 1 issues
Bird collisions with power lines - Category 1 issues	

Table 1: Changes in Issues from the 1996 GEIS Table B–1 to the 2013 GEIS Revision 1, Categorized by Resource Areas	
1996 GEIS Table B–1 Issues	2013 GEIS Revision 1 Table B–1 Issues
Water use conflicts - Category 2 issues (plants with cooling ponds or cooling towers using make-up water from a small river with low flow)	Water use conflicts with terrestrial resources - Category 2 issues (plants with cooling ponds or cooling towers)
Power line right-of-way management - Category 1 issues (cutting and herbicide application)	Consolidated into Transmission line right-of-way (ROW) management impacts on terrestrial resources - Category 1 issues
Floodplains and wetland on power line right of way - Category 1 issues	
Electromagnetic fields impacts on flora and fauna - Category 1 issues (plants, agricultural crops, honeybees, wildlife, livestock)	Electromagnetic fields on flora and fauna - Category 1 issues (plants, agricultural crops, honeybees, wildlife, livestock)
Aquatic Resources	
Impingement of fish and shellfish - Category 2 issues (plants with once-through cooling system or cooling-pond)	Consolidated into Impingement and entrainment of aquatic organisms - Category 2 issues (plants with once-through cooling system or cooling pond)
Entrainment of fish and shellfish in early life stages - Category 2 issues (plants with once-through cooling system and cooling-pond)	
Impingement of fish and shellfish - Category 1 issues (plants with cooling tower)	Consolidated into one issue: Impingement and entrainment of aquatic organisms - Category 1 issues (plants with cooling tower)
Entrainment of fish and shellfish in early life stages - Category 1 issues (plants with cooling tower)	
Entrainment of phytoplankton and zooplankton - Category 1 issues	No change from 1996
Heat shock - Category 2 issues (plants with once-through cooling system or cooling pond)	Thermal impacts on aquatic organisms - Category 2 issues (plants with once-through cooling system or cooling pond)

Table 1: Changes in Issues from the 1996 GEIS Table B–1 to the 2013 GEIS Revision 1, Categorized by Resource Areas	
1996 GEIS Table B–1 Issues	2013 GEIS Revision 1 Table B–1 Issues
Heat shock - Category 1 issues (for plants with cooling tower)	Thermal impacts on aquatic organisms - Category 1 issues (plants with cooling tower)
Cold shock - Category 1 issues	Consolidated into Infrequently reported thermal impacts – Category 1 issues
Thermal plume barrier to migrating fish - Category 1 issues	
Distribution of aquatic organisms - Category 1 issues	
Premature emergence of aquatic insects - Category 1 issues	
Stimulation of nuisance organisms (e.g., shipworms) - Category 1 issues	
Gas supersaturation (e.g., gas bubble disease) - Category 1 issues	Consolidated into Effects of cooling water discharge on dissolved oxygen, gas supersaturation, and eutrophication - Category 1 issues
Low dissolved oxygen in the discharge - Category 1 issues	
Eutrophication - Category 1 issues	
Accumulation of contaminants in sediments or biota - Category 1 issues	Effects of non-radiological contaminants on aquatic organisms - Category 1 issues
NA	<u>New issue:</u> Exposure of aquatic organisms to radionuclides - Category 1 issues
NA	<u>New issue:</u> Effects of dredging on aquatic organisms - Category 1 issues
Water use conflicts - Category 2 issues (plants with cooling ponds or cooling towers using make-up water from a small river with low flow)	Water use conflicts with aquatic resources - Category 2 issues (plants with cooling ponds or cooling towers using makeup water from a river)
Refurbishment - Category 1 issues	Effects on aquatic resources - Category 1 issues (non-cooling system impacts)

Table 1: Changes in Issues from the 1996 GEIS Table B-1 to the 2013 GEIS Revision 1, Categorized by Resource Areas	
1996 GEIS Table B-1 Issues	2013 GEIS Revision 1 Table B-1 Issues
NA	<u>New issue:</u> Impacts of transmission line ROW management on aquatic resources - Category 1 issues
Losses from predation, parasitism, and disease among organisms exposed to sub-lethal stresses - Category 1 issues	No change from 1996
Special Status Species and Habitats	
Threatened or endangered species - Category 2 issues	Threatened, endangered, and protected species and essential fish habitat - Category 2 issues
Historic and Cultural Resources	
Historic and archaeological resources - Category 2 issues	Historic and cultural resources - Category 2 issues
Socioeconomics	
Public services - Category 1 issues (public safety, social services, and tourism and recreation)	Employment and income, recreation and tourism - Category 1 issues
Tax revenue (discussed in the 1996 GEIS but not identified as an issue)	Tax revenues - Category 1 issues
Public services - Category 1 issues (public safety, social services, tourism, and recreation)	Consolidated into community services and education - Category 1 issues
Public services - Category 2 issues (public utilities)	
Public services - Category 1 issues (education)	
Public services - refurbishment Category 2 issues (education)	
Public services - Category 2 issues (transportation)	Transportation - Category 1 issues
Housing impacts - Category 2 issues	Population and housing impacts - Category 1 issues

Staff Consideration of the Changes by Resource Areas

An applicant ER for license renewal does not need to provide analyses of the environmental impacts of license renewal for issues identified as Category 1 (10 CFR 51.53(c)(3)(i)). However, for all issues, the applicant ER must identify any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware (10 CFR 51.53(c)(3)(iv)).

Air Quality Resource

Major Changes

The 2013 final rule and GEIS updating Table B–1 in Appendix B to Subpart A of the revised 10 CFR Part 51 entailed the following change:

The Category 2 (site-specific) issue, “Air quality during refurbishment (nonattainment and maintenance areas)” was changed to “Air quality impacts (all plants)” (Category 1) with an impact level of SMALL [See Table 1].

Additional Needs/Considerations

The staff will need to provide sufficient discussion of this issue in the affected environment chapter of SEISs prepared for SLR to include consideration of the ambient air quality of the plant site and air-shed. This would encompass the associated air pollutant regulatory environment that would govern continued operations during the license renewal term. The NRC staff will also need to make a determination as to whether any new and significant information exists with respect to the impacts of continued operations on air quality.

Surface Water Resources

Major Changes

Effects of Dredging on Surface Water Quality: The 2013 final rule and GEIS updating Table B–1 in Appendix B to Subpart A of the revised 10 CFR Part 51 entails the following change:

A new Category 1 (generic) issue, “Effects of Dredging on Surface Water Quality,” was added, which considers the impacts of dredging to maintain intake and discharge structures at nuclear power plants. This issue has an impact level of small. The impact of dredging on surface water quality was not considered in the 1996 GEIS and was not listed in Table B–1 prior to the final rule. The rule states that most plants have intake and discharge structures that must be maintained by periodic dredging of sediment accumulated in or on the structures. The NRC has found that dredging, while temporarily increasing turbidity in the source water body, generally has little long-term effect on water quality. In addition to maintaining intake and discharge structures, dredging is often done to keep barge slips and channels open to service the plant. Dredged material is most often disposed on property owned by the applicant and usually contains no hazardous materials. Dredging must be performed under a permit issued by the U.S. Army Corps of Engineers (the Corps) and consequently, each dredging action would be subject to a site-specific environmental review conducted by the Corps. Temporary impacts of dredging are measurable in general water quality terms, but the impacts have been shown to be small.

Status of compliance

Water Quality Certification under Section 401 of the Federal Clean Water Act (CWA, 33 U.S.C. Section 1341(a)). Relevant to §51.45(d) of NRC's regulations and as further specified under CWA Section 401, the NRC cannot issue a renewed operating license unless the applicant provides the NRC, as the licensing agency, with a water quality certification from the State or other appropriate documentation, such as a waiver or statement that 401 certification does not apply. This certification denotes that discharges from the project or facility to be licensed will comply with CWA requirements and will not cause or contribute to a violation of state water quality standards.

Per §51.45(d), applicant ERs are required to address status of compliance with applicable environmental regulations, and the NRC is required to document status of compliance in draft EISs and to consider compliance with environmental quality standards under 10 CFR 51.71.

In the 1996 GEIS, the NRC stated as a presumptive standard that license renewal applicants with a National Pollutant Discharge Elimination System (NPDES) permit issued by a state water quality agency implies certification under Section 401 of the CWA. Therefore, applicants for license renewal historically submitted documentation in their ERs that the nuclear power plant in question had a valid NPDES permit so as to provide de facto proof of 401 certification.

Nevertheless, the 2013 GEIS was revised to clarify that Section 401 of the CWA explicitly requires an applicant for a Federal license or permit (such as the applicant for renewal of an NRC license) that may cause a discharge of regulated pollutants into navigable waters to provide the licensing agency (the NRC in this case) with water quality certification from the State in which the discharge would or could occur. This revision was made in consultation with NRC's Office of General Counsel and in light of notable legal challenges by States to license renewal on CWA grounds. In the 2013 GEIS, the NRC recognizes that some NPDES-delegated States explicitly integrate their 401 certification process with NPDES permit issuance. This is not the norm, however, and since issuance of the 2013 GEIS NRC staff have communicated to license renewal applicants the need to provide appropriate documentation of 401 certification to support license renewal.

Coastal Zone Management Consistency Certification. Similarly, the applicant should request a coastal zone consistency determination from the responsible State agency and provide documentation of the consistency determination or other appropriate documentation in its ER. This is because under Section 307 of the Coastal Zone Management Act of 1972, applicants for Federal permits whose proposed activities could reasonably affect coastal zones certify to the licensing agency (here, the NRC) that the proposed activity would be consistent with the state's coastal management program.

Additional Needs/Considerations

The Category 1 issue, "Effects of Dredging on Surface Water Quality," is a new issue not likely to have been previously evaluated during the environmental review for initial license renewal.

In their ERs, applicants submitting SLR applications should provide sufficient information on their dredging activities, including associated regulatory requirements, to enable the NRC staff to perform an independent review of the associated activities consistent with the requirements of 10 CFR 51.70, 51.71, and 51.95 of NRC's regulations. Specifically, the NRC staff will also

need to make a determination as to whether any new and significant information exists with respect to the impacts of dredging activities on surface water resources during continued operations.

The NRC's acceptance standard for adequate documentation of CWA Section 401 Water Quality Certification (i.e., status of compliance) has changed. Applicants whose plants are still operating under the 401 Water Quality Certification received for initial licensing will need to provide current documentation of Section 401 Water Quality Certification from their State to support their SLR application. This may entail a new application process with the responsible State agency, which could potentially have a long lead-time.

The staff will still need to provide sufficient discussion of this issue as part of the affected environment chapter (surface water resources) and status of compliance discussion (Chapter 1) in SEISs prepared for SLR.

Groundwater Resources

For the new Category 2 issue "Radionuclides Released to Groundwater," the applicant's site-specific assessment must include a characterization of any existing groundwater contamination from inadvertent releases, a discussion of any groundwater protection program, and include an assessment (projection) of the impact of inadvertent releases to the environment during the license renewal term.

Terrestrial Resources

"Effects on terrestrial resources (non-cooling system impacts)" is now a Category 2 issue regardless of whether license renewal would involve refurbishment or not.

"Exposure of terrestrial organisms to radionuclides" (Category 1) is a new GEIS issue.

"Water use conflicts with terrestrial resources (plants with cooling ponds or cooling towers using makeup water from a river)" (Category 2) has been expanded to include all rivers, whereas the 1996 GEIS issue only considered small rivers with low flow.

Aquatic Resources

"Exposure of aquatic organisms to radionuclides" (Category 1) is a new GEIS issue.

"Effects of dredging on aquatic resources" (Category 1) is a new GEIS issue.

"Water use conflicts with aquatic resources (plants with cooling ponds or cooling towers using makeup water from a river)" (Category 2) has been expanded to include all rivers, whereas the 1996 GEIS issue only considered small rivers with low flow.

"Impacts of transmission line ROW maintenance on aquatic resources" (Category 1) is a new GEIS issue.

Protected Species & Habitats (U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS))

“Threatened, endangered, and protected species, critical habitat and essential fish habitat” (Category 2) now includes essential fish habitat. Additionally, impacts are reported by species or habitat according to the language in the Endangered Species Act and Magnuson–Stevens Act rather than resource-wide as SMALL, MODERATE, or LARGE.

- The applicant ERs need to provide adequate and recent data on the presence/absence of Federally listed species near the plant site and, if present, the potential impacts of continued operation on those species.
- The applicant ERs need to provide recent data documenting the occurrence of and potential impacts to designated Essential Fish Habitat near the plant site.

Promulgation of regulations for Essential Fish Habitat (EFH) consultation: The National Marine Fisheries Service (NMFS) promulgated regulations for EFH consultation under the Magnuson–Stevens Act in January 2002 (50 CFR 600, Subpart K, “EFH Coordination, Consultation, and Recommendations). Therefore, early NRC license renewal environmental reviews did not consider EFH. The first SEIS to consider EFH was Supplement 25 for Brunswick issued in April 2006.

New species listed and new critical habitat designated under the Endangered Species Act (ESA): The U.S. Fish and Wildlife Service (FWS) and NMFS list new species and designate new critical habitats on a regular basis. Each SLR will need to consider whether new species have been listed since the initial license renewal. Additionally, some species considered during the initial license renewal may have been delisted. The FWS maintains the current List of Endangered and Threatened Wildlife and Plants is maintained at 50 CFR 17.11 (wildlife) and 50 CFR 17.12 (plants).

Microbiological Hazards

“Microbiological hazards to the public (plants with cooling ponds or canals or cooling towers that discharge to a river)” (Category 2) now includes all plants discharging to a river, whereas the 1996 GEIS only considered plants that discharge to a small river.

Environmental Justice in Minority Population and Low-income Population

Prior to 2013, license renewal applicants used Regulatory Guide (RG) 4.2, Supplement 1 (September 2000) to prepare the license renewal application. Regulatory Guidance 4.2, S1, Section 4.22, “Environmental Justice” states:

Environmental justice was not reviewed in NUREG-1437 [GEIS]. Executive Order 12898, “Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations,” issued on February 11, 1994, is designed to focus the attention of Federal agencies on the human health and environmental conditions in minority and low-income communities. The NRC Office of Nuclear Reactor Regulation (NRR) is guided in its consideration of environmental justice by Attachment 4, “NRR Procedures for Environmental Justice Reviews,” to NRR Office Letter No. 906, Revision 2, “Procedural Guidance for Preparing Environmental Assessments and Considering

Environmental Issues,” September 21, 1999. NRR Office Letter No. 906 is revised periodically.

Hence, license renewal applicants used NRR Office Letter 906 in preparing the application. The staff currently follows NRR Office Instruction LIC-203, which replaced NRR Office Letter 906, to conduct Environmental Justice reviews of the applications. Environmental Justice (EJ) review guidance for the staff review has evolved since the issuance of RG 4.2, Supplement 1 (September 2000). The historical timeline of the changes is listed in Table 2 below.

Table 2: NRR EJ Review Office Instruction Timeline		
Year	Action	Remarks
1994	President Clinton issues Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” February 11, 1994	
	NRC Chairman (Ivan Selin) sends letter to President Clinton indicating that “the NRC would endeavor to carry out the measures set forth in the Executive Order...as part of NRC’s efforts to comply with the requirements of NEPA.” March 31, 1994	
1995	NRC issues Environmental Justice Strategy	
1996	NRR Office Letter No. 906, Revision 1, “Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues” September 27, 1996	No EJ review guidance
1997	Council on Environmental Quality (CEQ) issues “Environmental Justice Guidance Under the National Environmental Policy Act” December 10, 1997	CEQ EJ review guidance issued to all Federal agencies
1999	NRR Office Letter No. 906, Revision 2, “Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues” September 21, 1999	EJ review guidance is added as Attachment 4
2001	NRR Office Instruction, LIC-203, “Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues,” June 21, 2001	Replaces NRR Office Letter No. 906, Revision 2, EJ review guidance revised in Appendix D
2003	Commission’s proposed draft, “Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions” is published in <i>Federal Register</i> on November 5, 2003 (68 FR 62642)	Commission issues draft policy statement on EJ
2004	NRR Office Instruction, LIC-203, Revision 1, “Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues,” May 24, 2004	EJ review guidance revised consistent with Commission’s draft policy statement
	Commission’s “Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions” is published in <i>Federal Register</i> on August 24, 2004 (69 FR 52040)	Commission issues final policy statement on EJ

Table 2: NRR EJ Review Office Instruction Timeline		
Year	Action	Remarks
2009	NRR Office Instruction, LIC-203, Revision 2, "Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues," February 17, 2009	EJ review guidance revised consistent with Commission's final policy statement in Appendix C.
2013	NRR Office Instruction, LIC-203, Revision 3, "Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues" July 1, 2013	EJ review guidance revised in Appendix D

The NRC staff has used and continues to use EJ impact analysis information provided in the license renewal applications, especially the EJ maps showing the location of high percentage EJ populations. The quality of the information provided in the applications has varied among the nuclear plant sites previously reviewed. Consistent quality information is desired in future applications.

Lessons Learned to Optimize License Renewal Application Reviews - Environmental

Project Logistics:

- (1) Review past license renewal applications (LRAs) and NRC staff requests for additional information to ensure the application contains the requisite information, thereby minimizing the number of staff data needs after LRA submission.
- (2) Talk to other applicants about lessons learned from recent LRA reviews.
- (3) Obtain peer review of the LRA prior to submittal.
- (4) Provide timely responses to NRC staff requests for additional information.

Addressing Environmental Issues:

- (1) Applicant should interact with government agencies with which the NRC may be required to consult (e.g., the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), State Historic Preservation Office, affected Indian tribes) early in the development of the LRA and should maintain communications with these agencies throughout the license renewal process.
- (2) Applicant should provide a copy of the Clean Water Act, Section 401, Water Quality Certification, waiver, or other determination in the application.
- (3) Applicant should provide a projection of the impact to the environment from inadvertent releases of radionuclides in groundwater.
- (4) Applicants who uses or plans to use high-burnup fuel should inform NRC staff early.
- (5) Applicant should provide all environmental report reference documents on a reading portal or CD along with the LRA.
- (6) Applicant should ensure that its environmental report includes the following items, and the applicant should keep NRC staff informed of changes to these items during the NRC review:
 - (a) Status of National Pollutant Discharge Elimination System (NPDES) permit renewal.
 - (b) Summary of the plant's water withdrawal and consumptive water use (i.e., last 5 years) and any regulatory limits on withdrawals.
 - (c) Brief summary and current status (monitoring only, remediation, etc.) of any inadvertent releases of radionuclides to groundwater.
 - (d) Aquatic or terrestrial ecology studies that have been performed since the initial license renewal, such as those that may have been performed to demonstrate compliance with other laws or regulations (e.g., Clean Water Act).
 - (e) Federally listed species and critical habitats present, potential impacts on those species and habitats, and discussion of any relevant communications with the FWS or the NMFS with an emphasis on any newly listed species since the initial license renewal. Note that

applicant should analyze the effects of each generic environmental impact statement (GEIS) ecological resource issue (aquatic or terrestrial, as appropriate) on each Federally listed species that is potentially present in the action area (i.e., the effects of impingement and entrainment on each Federally listed aquatic species should be analyzed regardless of whether the GEIS issue "impingement and entrainment of aquatic organisms" is Category 1 or 2 issue for that plant).

- (f) Potential impacts on Essential Fish Habitat, including prey of Federally managed species, and discussion of any relevant communications with the NMFS.
- (g) Historic or cultural resources discovered subsequent to initial license renewal within the area of potential effect and the status of any associated communications with State Historic Preservation Offices or Tribal nations.
- (h) Status of Historic American Buildings Survey/Historic American Engineering Record documentation of nuclear power plant buildings and structures.
- (i) Anticipated refurbishment activities.
- (j) Summary of communications with local public health officials regarding the likelihood of the plant's thermal discharge to increase the concentration of thermophilic organisms near the vicinity of the plant as well as any related studies.
- (k) Severe accident mitigation analysis (provided with the LRA) that uses the latest update to the plant's probabilistic risk assessment.

Essential Environmental Issues for Subsequent License Renewal Applicants

Subsequent license renewal (SLR) applicants should be certain to address the following issues and/or data needs in their Environmental Reports or in attached documentation to facilitate the NRC's environmental review process for SLR:

General Environmental:

- Based on NRC's June 2013 final rule updating 10 CFR Part 5, provide adequate and recent information for all new and revised Category 1 (generic) and Category 2 (site-specific) National Environmental Policy Act issues contained in Table B-1 in Appendix B to Subpart A of the revised 10 CFR Part 51.
- For all Category 1 and Category 2 issues addressed in the applicant's Environmental Report for initial license renewal and as described in the NRC's Supplemental Environmental Impact Statement, address any known new and significant information regarding the environmental impacts of license renewal and continued operations of which the applicant is aware.

Groundwater:

- For the new Category 2 issue "Radionuclides Released to Groundwater," the applicant's site-specific assessment must include a characterization of any existing groundwater contamination from inadvertent releases, a discussion of any groundwater protection program, and include an assessment (projection) of the impact of inadvertent releases to the environment during the license renewal term.

Ecology:

- Adequate and recent data on the presence/absence of Federally listed species near the plant site and, if present, the potential impacts of continued operation on those species.
- Recent data documenting the occurrence of and potential impacts to designated Essential Fish Habitat near the plant site.

Documentation Support License Renewal:

- Water Quality Certificate. For SLR, applicants should provide appropriate documentation in its Environmental Report in the form of a State-issued 401 Water Quality Certificate, a waiver, or documentation from the State that no new certificate is required for SLR.

[BASIS: An applicant for a Federal license to conduct activities that may cause a discharge of regulated pollutants into navigable waters of the United States is required by Section 401 of the Clean Water Act to provide the Federal licensing agency (the NRC) with a water quality certification, or other applicable documentation, from the state in which the discharge occurs or would occur.]

- Coastal Zone Management Consistency Certification. The applicant should request a coastal zone consistency determination from the responsible State agency and provide documentation of the consistency determination or other appropriate documentation in its Environmental Report.

[BASIS: Under Section 307 of the Coastal Zone Management Act of 1972, applicants for Federal permits whose proposed activities could reasonably affect coastal zones certify to the licensing agency (here, the NRC) that the proposed activity would be consistent with the state's coastal management program.

Generic List* of Documents for an Environmental Review Support Portal

1. Cultural Resource Plan
2. Archaeological Surveys
3. Phase 1 Cultural Study
4. Threatened and Endangered Species Survey and Assessment Reports – preconstruction through present, as applicable
5. Aquatic Species Survey and Assessment Reports (e.g. fish and ichthyoplankton surveys, impingement and entrainment studies) – preconstruction through present, as applicable
6. Terrestrial Species Survey and Assessment Reports (e.g. wildlife surveys, vegetation and habitat surveys or assessments) – preconstruction through present, as applicable
7. Stormwater Pollution Prevention Plan
8. NPDES permit and permit renewal application (as applicable)
9. Recent NPDES Monitoring Reports (last 5 years)
10. Water withdrawal and discharge volumes (last 5 years)
11. Recent air quality permit(s) and permit renewal applications (as applicable)
12. Annual air emission reports
13. Clean Water Act 316(b) proposals for information collections, demonstrations, and related correspondence to/from the EPA or State agency
14. Industry Ground Water Protection Initiative Periodic Self Assessments
15. Letters and/or communications with the other Federal, State, or local officials (e.g. State Historic Preservation Officer, U.S. Fish and Wildlife Service, National Marine Fisheries Service, State environmental resource agencies)
16. Letters and/or communications with the State related to microbiological hazards
17. Depredation permit(s) obtained pursuant to the Migratory Bird Treaty Act (as applicable)
18. Take permit obtained pursuant to Bald and Golden Eagle Protection Act (as applicable)
19. Waste management and minimization program procedures
20. Construction Permit – Environmental Report

- 21. Construction Permit – Final Environmental Statement
- 22. Operating License- Environmental Report
- 23. Operating License – Final Environmental Statement
- 24. For SAMA, see the list of Supporting Documentation in NEI 17-04, Section 3.5.2

Note: *The list may vary site to site.