

Lessons Learned to be Communicated to Applicants to Optimize License Renewal Application Reviews

Issues Applicable to Both Environmental and Safety Reviews:

- 1) Review past license renewal applications (LRA) and NRC requests for additional information (RAIs) to ensure their application contains the requisite information, thereby negating the need for an RAI.**
- 2) Talk to other applicants about lessons learned from recent LRA reviews.**
- 3) Timely responses.**
- 4) Get application peer reviewed prior to submittal**

Environmental Issues:

- (1) Applicants should begin interactions with government agencies early and maintain communications with these agencies while developing their license renewal application (LRA) and during the NRC's LRA review.**
- (2) Applicants should provide a Clean Water Act (CWA), Section 401, Water Quality Certification, waiver, or other determination with their application.**
- (3) Applicants must provide a projection of the impact to the environment from inadvertent releases of radionuclides in groundwater.**
- (4) Applicants should analyze the effects of each GEIS ecological resource issue (aquatic or terrestrial, as appropriate) on each-Federally listed species that is potentially present in the action area.**
- (5) Applicants that use or plan to use high burnup fuel must inform NRC staff early.**
- (6) Applicants must ensure that the severe accident mitigation analysis provided with the LRA uses the latest update to the plant's probabilistic risk assessment (PRA).**
- (7) Applicants should provide all ER reference documents on a portal along with the LRA.**
- (8) Applicants should ensure that their ER include the following items and keep NRC staff posted on changes to these items during the NRC review:**
 - (a) Status of 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 U.S. Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS) with an emphasis on any newly listed species since the initial license renewal;
- (f) Potential impacts on Essential Fish Habitat, including prey of Federally managed species, and discussion of any relevant communications with 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 (HABS)/Historic American Engineering Record (HAER) documentation of nuclear power plant buildings and structures;
- (i) Anticipated refurbishment activities;
- (j) Summary of communication with local public health officials regarding the likelihood of the plant's thermal discharge to increase the amount or concentration of thermophilic organisms near the vicinity of the plant.

Safety Issues:

- (1) Lack of consistency through-out the LRA. The staff finds differences in information from table 1s compared to table 2s, or the FSAR supplement does not address supplements to the aging programs. Examples include:**
 - a. Table 3.6.2 contradicts Table 3.6.1 in that Table 3.6.2 omits malleable iron and aluminum from the list of high voltage insulator materials. LRA Table 3.6.1 is consistent with the SRP-LR Table 3.6.1 with both Table 3.6.1 and SRP-LR Table 3.6.1 material descriptions including malleable iron and aluminum.
 - b. Flow blockage due to fouling in the fire water system – LRA Fire Water System AMP and USAR supplement included provisions to manage flow blockage due to fouling; however, LRA Table 3.3.1 and 3.3.2-7 do not cite flow blockage due to fouling as an aging effect requiring management
- (2) LRAs do not address staff concerns that are documented in previous reviews. Examples in this category may include**
 - a. Missing fire protection components from the fire protection scoping/screening table. Fire protection systems and components were not highlighted on boundary drawing. The specific systems and components may vary from application to application.
 - b. 10 CFR 54 Appendix J Containment Leak Rate – staff asked the applicant to clarify the basis of excluding certain containment structure pressure-retaining components (e.g., penetrations, valves) from the AMP, and how the aging effects of excluded components will be managed during the PEO. The GALL AMP XI.S4, "10 CFR Part 50, Appendix J," "scope of program" program element sets the boundary condition, "the scope of the containment LRT program includes all containment boundary pressure-retaining components.

(3) LRAs reference reports and methodologies that have not been approved by the NRC. An example is as follows:

- a. EPRI Report 1024995 “Environmentally Assisted Fatigue Screening, Process and Technical Basis for Identifying EAF Limiting Locations,” the staff has concerns about the methodology and has not approved this report. LRAs use this report without including the additional information addressing the staff’s well documented concerns.

(4) Applicants need to ensure that Current Licensing Basis (CLB) issues are addressed prior to submittal of their LRA so that the CLB issue resolution does not impact the LRA review schedule. An example in this area is as follows:

- a. The applicant calculated neutron fluence values by using two different methods, pre-EPU and post-EPU fluence methods. The pre-EPU method fluence method associated with the current licensing basis had not been approved for use at the plant by the NRC staff. The applicant submitted a LAR to appropriately incorporate a single fluence method to cover the PEO, which impacted the LRA review.

(5) Applicants must ensure information provided in the LRA is sufficient for the staff to reach a regulatory decision. Sometimes there is not adequate technical justification in the program to demonstrate why managing the aging effects is not applicable.

- a. **Examples (from TLAA Section 4.6 Fatigue analysis) include:**
 - i. Number of stress cycles assumed in the original design analyses
 - ii. Clarify that transients were considered in each or some of the design analyses described in LRA 4.6.
- b. **A second set of examples came from managing high strength bolts in Structure Monitoring (SMP) & IWF Programs:**
 - i. state whether or not there are high-strength structural bolts (actual measured yield strength ≥ 150 ksi) in sizes > 1 ” diameter are used in structural applications, and
 - ii. how the SMP will address the aging effects when used with no enhancements provided, or
 - iii. provide adequate tech justification of why managing this aging effects is not applicable, or
 - iv. it is within the scope of SMP, or IWF, or both