

Industry's Proposed Realistic Schedule for High Quality PRA Standards

On March 12, the NRC presented a preliminary schedule for the completion of various (PRA) standards and associated peer review guidance to the industry. In the meeting, the NRC stated that the schedule was very ambitious, with a proposed minimum duration. The industry believes that the NRC's proposed schedule does not adequately address the lessons learned from past standards development and implementation efforts, the current state of PRA methods with respect to the technical requirements of the PRA standard, and the available resources to support such a schedule.

As discussed in this letter, there are significant lessons learned from the past efforts that should be considered in defining the path forward on the refinement of existing PRA standards and development and endorsement of additional PRA standards:

- Industry believes that the scope addressed in the existing ASME/ANS PRA standard and endorsed in Regulatory Guide 1.200, Rev. 2 is sufficient to support the vast majority of applications being pursued by licensees. Since Regulatory Guide 1.200 applies to voluntary applications, there is no driving force to rapidly issue and endorse standards addressing additional PRA scope.
- Industry's experience in implementing the fire PRA requirements of the existing ASME/ANS PRA standard have uncovered many fire PRA methods refinements that are necessary to create a fire PRA that is usable for routine risk-informed decision-making. The recent EPRI pilot of the seismic portion of the ASME/ANS PRA standard has confirmed the importance of a detailed pilot, identifying both clarifications to the standard and needed methods improvements. The overall schedule for the launch of any new standards must account for the refinement of the standard requirements and the supporting technical methods.
- Even the internal events, at-power PRA standard went through several revisions until it became a usable tool. In fact, the major revision of the internal events, at-power PRA standard that occurred in ASME RA-Sb-2005 took 30 months from the pilot to publishing, despite the fact that there was a high level of experience with internal events PRAs. This is not surprising since all standards' activities are supported by volunteers.
- The additional PRA standards being developed all have extensive interfaces with the existing ASME/ANS PRA standard that need to be piloted. As we have seen with the on-going fire PRAs, failure to fully pilot the technical methods and standards leads to an unstable, unpredictable process. This is even more important for the low power/shutdown (LPSD), Level 2, and Level 3 PRA standards, where the scope and level of interaction with the requirements of the existing ASME/ANS PRA standard are substantially more complex. Furthermore, the industry and NRC have very little experience in using LPSD, Level 2, and Level 3 PRAs in regulatory decision-making.

- The NRC is just completing a state-of-the-art study on the consequences of reactor accidents. According to the public presentations made by the NRC staff, the SOARCA study has developed many improvements to the technical methods used in Level 2 and Level 3 PRAs. More importantly, these presentations indicate that the SOARCA results and insights are very different than previous NRC reference studies, such as NUREG-1150. Although SOARCA is not a Level 2 or Level 3 PRA, given the significance of these findings, it seems appropriate to document the technical methods, pilot those methods in a reference Level 2/Level 3 PRA, and address those improved methods in the supporting requirements of the standards before endorsement.
- The NRC has recently publicly discussed an update of the landmark NUREG-1150 study. Such an effort would be timely in light of these developing standards. The industry supports the NRC in this endeavor, as such a study could serve as an integrated pilot of the existing and new PRA standards for a spectrum of reactor and containment designs. Such an effort would provide an opportunity to establish a reference study that documents current methods and standard requirements and would be of benefit to both the NRC and the industry.
- The NRC's proposed plan presented at the March 12 meeting does not result in a comprehensive framework of standards. The requirements for fire PRA during LPSD conditions are not included. This would leave licensees in an awkward position of having a means to address many, but not all, risk contributors. It seems prudent to complete standards for the entire set of risk contributors as part of the next revision of Regulatory Guide 1.200. The LPSD fire PRA requirements were not promulgated by ANS because the writers felt that there was a need for more data and technical methods development before the technical requirements could be established. The industry agrees that those technical methods and data are needed before such a standard could be written. Consequently, we have added the development and piloting in the attached schedule.
- As these individual standards are piloted and completed, there is a fairly substantial technical effort to ensure that the technical requirements of the standards are properly coordinated/integrated.
- As mentioned above, the industry does not foresee a need for these additional standards. However, if they are going to be endorsed, then a regulatory pilot is needed, as was done with the original at-power Level 1 PRA requirements in Revision 0 of Regulatory Guide 1.200.

Industry provides a proposed draft plan and schedule that addresses these and other considerations. The essential elements of this plan are:

- Completion of draft standards
- Identification of gaps in technical methods supporting each standard

- An integrated pilot of the methods and standards in a base PRA model for, representative set of plants and plant operating states
- Refinement of methods and standards, based on the plant base model pilots
- Performance of a regulatory application employing the revised methods and standards
- Refinement of methods and standards, based on the regulatory application
- Issuance of the final standards and Revision 3 of Regulatory Guide 1.200

Figure 1

Fire PRA Schedule

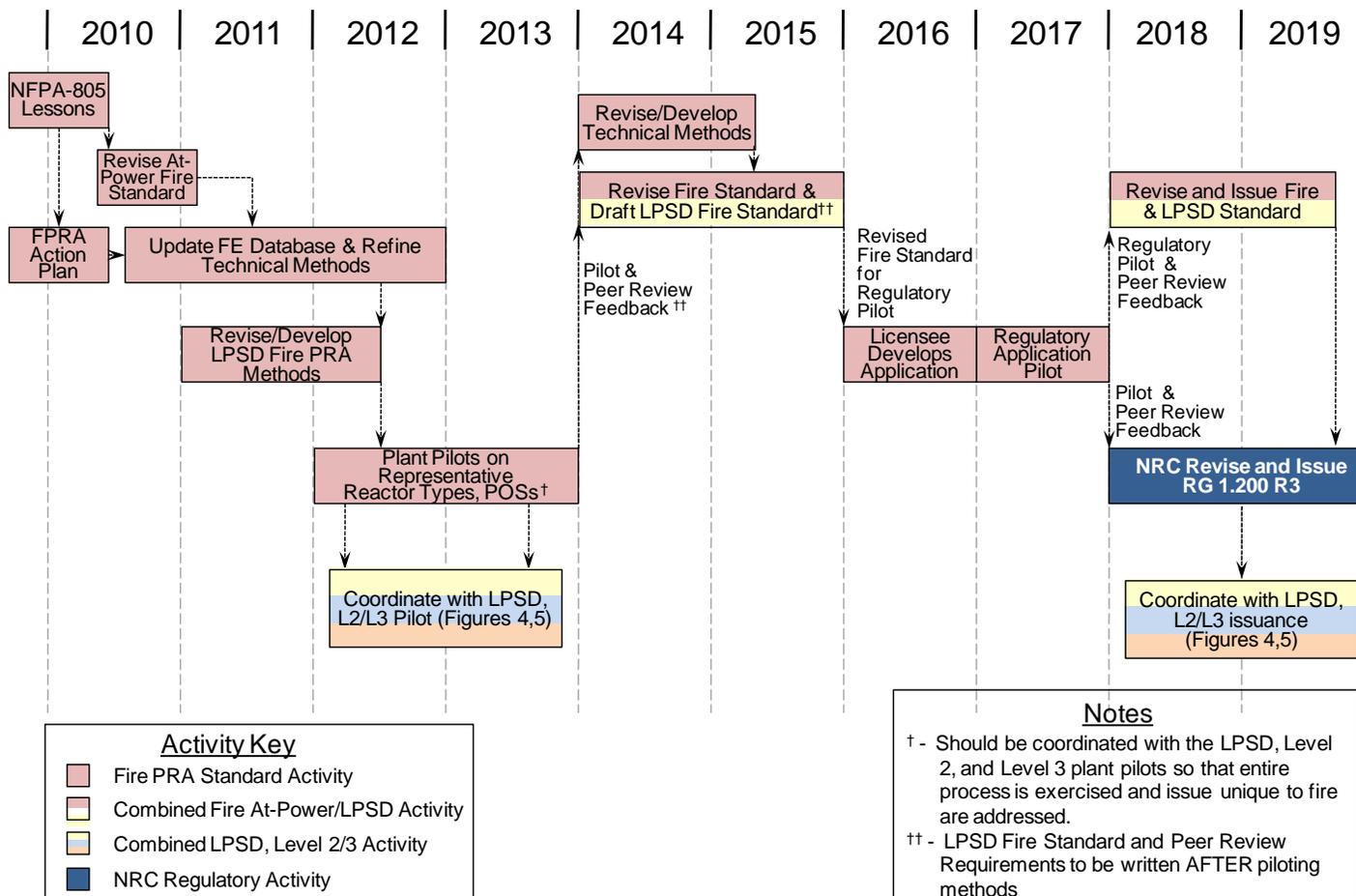


Figure 2

Seismic PRA Schedule

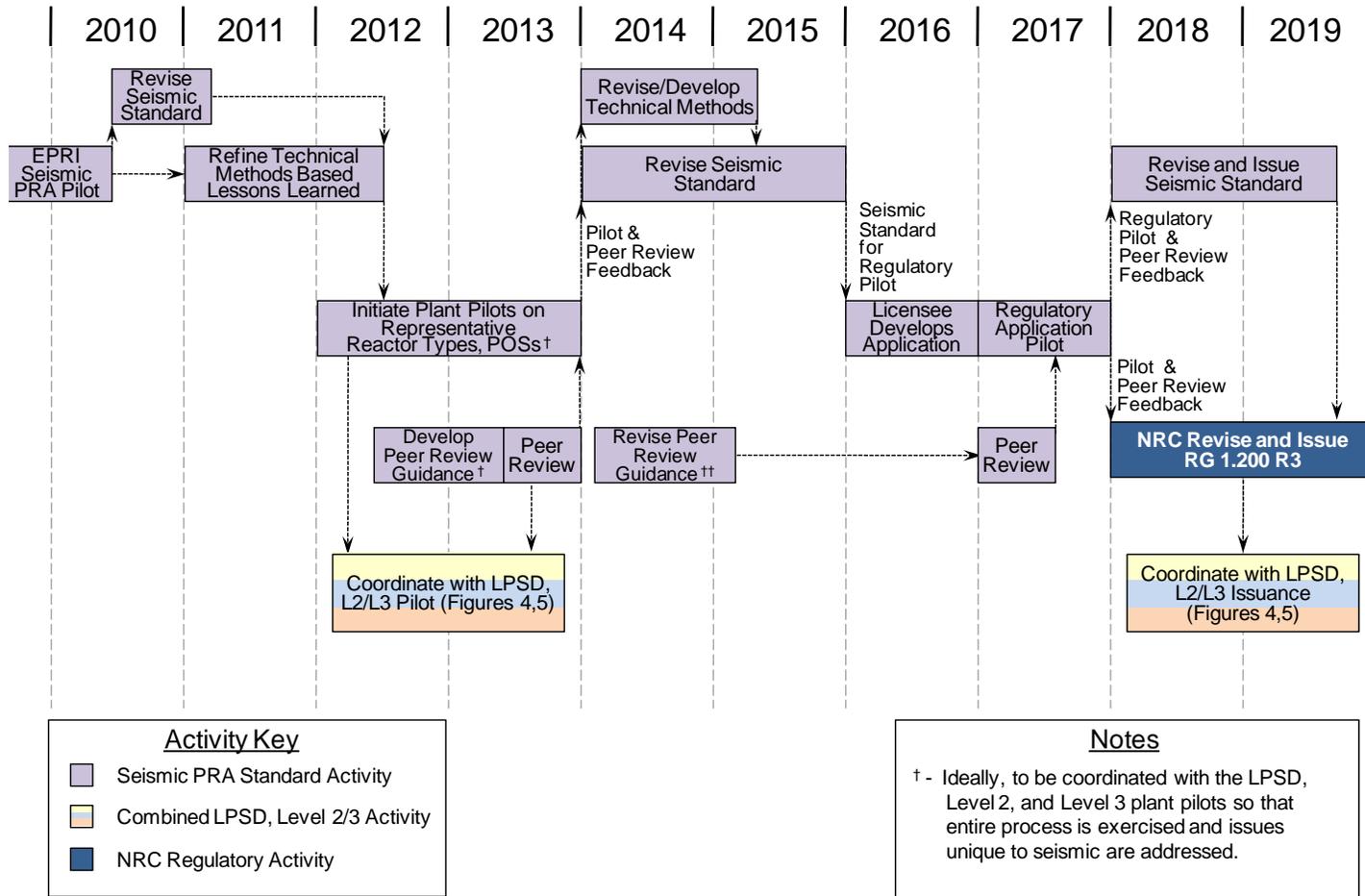


Figure 3

Other Hazards PRA Schedule

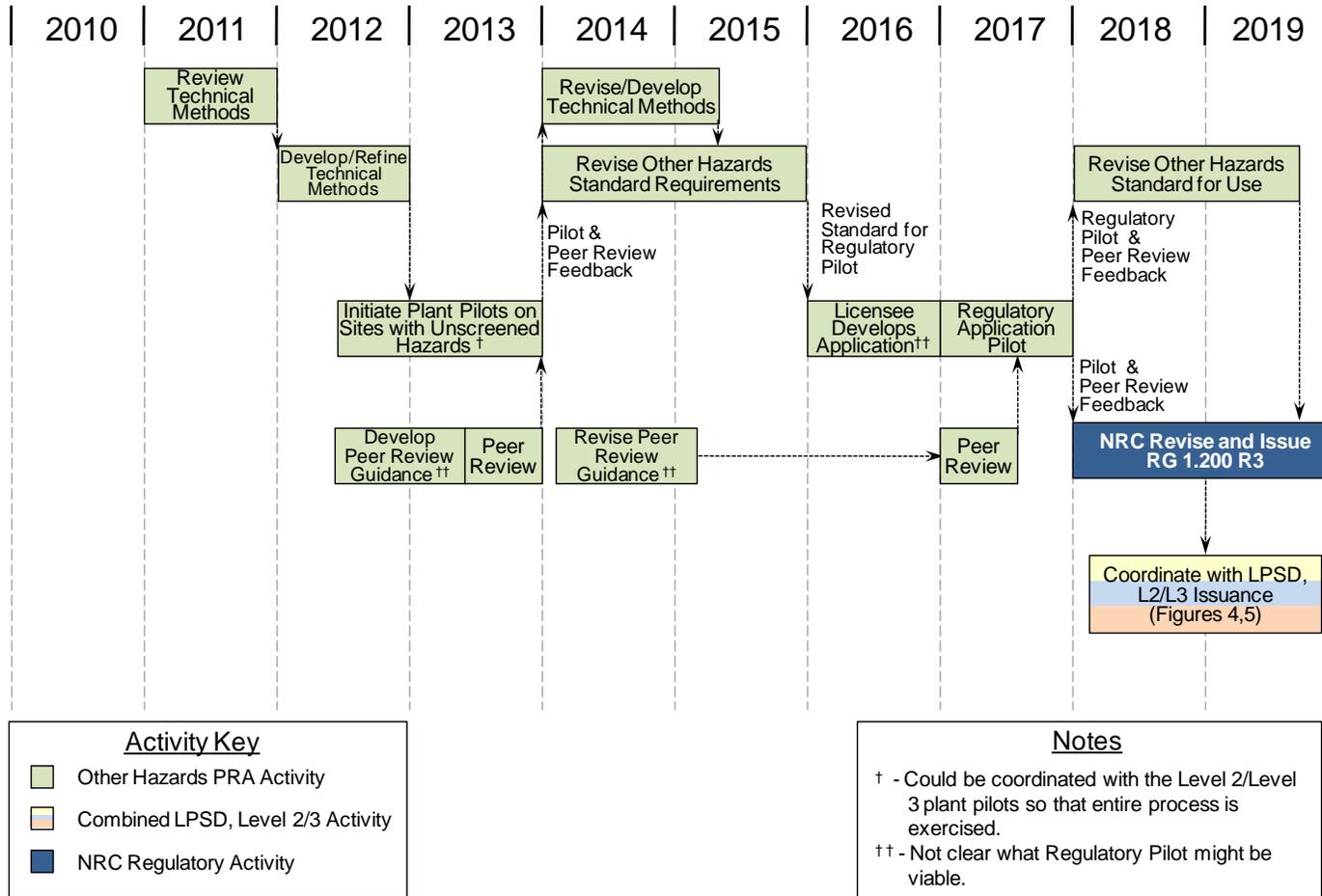


Figure 4

LPSD PRA Schedule

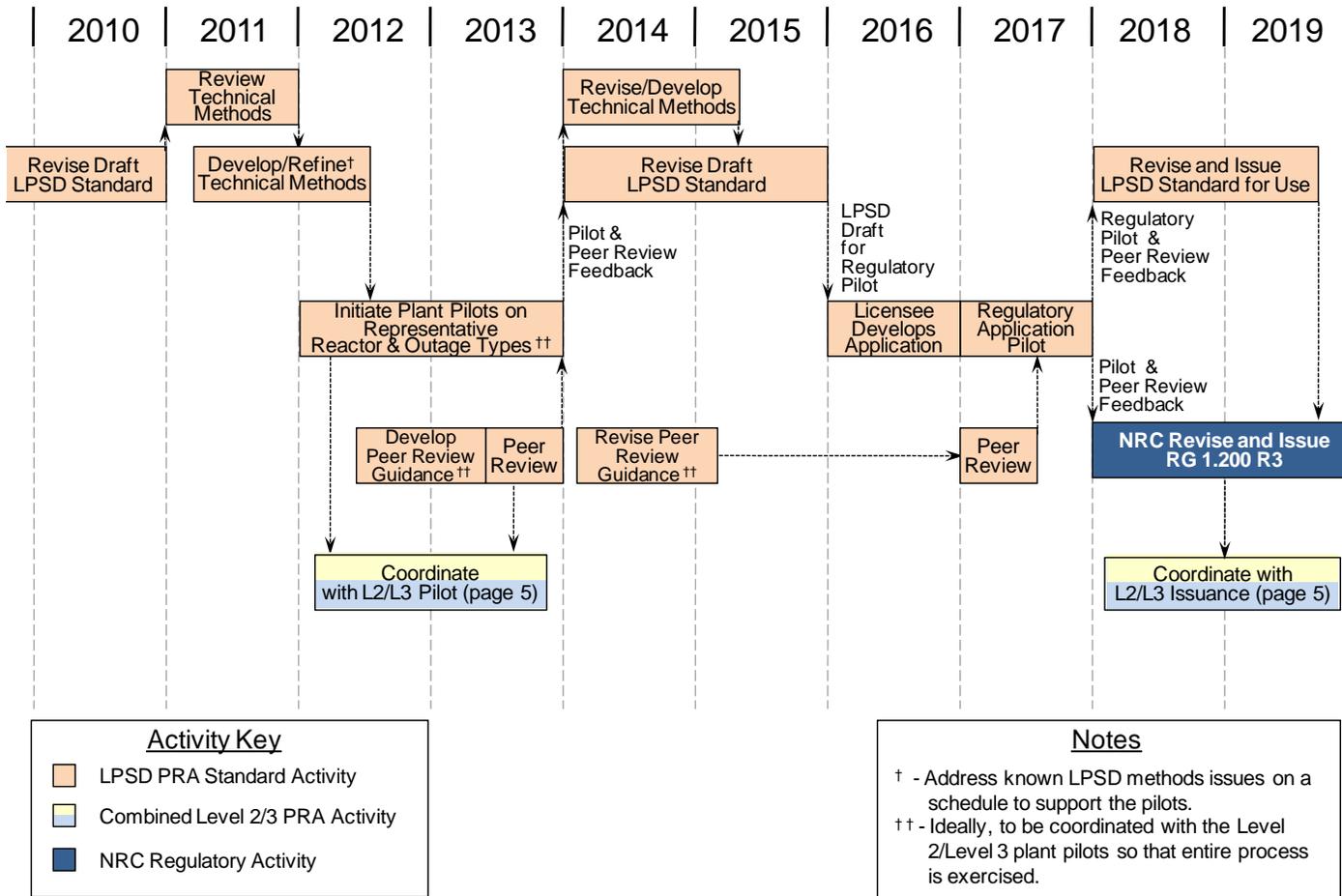


Figure 5

Level 2 & 3 PRA Schedule

