

Review of the PWR-GALE Code (GALE86)

Potential Code Features Requiring Modifications for Evaluating iPWR Applications

Based on an initial evaluation of the PWR-GALE code, the following provides a preliminary compilation of major features that should be reviewed in planning a future revision of the PWR-GALE code to accommodate the technical review of applications based on small integral PWR designs (iPWRs). The current generic version of the PWR-GALE code is PWR-GALE86.

The compilation is presented in no specific order of importance. Also, this compilation is not meant to be a complete and definitive listing of topics to be addressed in a future revision of the code since the staff has not fully completed a detailed review of the code. Once completed, the staff will determine the priority and timeline for incorporating these changes into a future revision of the code, and scope revisions to relevant NRC guidance, such as SRP/DSRS 11.1 and RG 1.112.

- 1. Scaling of Power Levels**
- 2. Radionuclide Concentration Levels**
- 3. Liquid and Gaseous Process Stream Treatment and Effluent Releases**
- 4. Qualifiers on Radionuclides and Addition of Other Radionuclides**
- 5. Noble Gases Retention Times in Charcoal Delay Beds**
- 6. Radioiodine Filtration in Charcoal Decay Tanks**
- 7. Annualized Release Rates and Capacity Factor**
- 8. Adjustments for Anticipated Operational Occurrences**
- 9. Liquid and Gaseous Effluent Code Output Results and Presentation**
- 10. Code Structure and Operating Platform**
- 11. Update of NUREG-0017**
- 12. Future NRO Updates on iPWR-GALE Development Activities**