

NRC – ESBWR DCWG Meeting

May 22, 2008

Expected Grand Gulf COLA Impacts, Related
to DCD Changes to Stack Design and
“Normal” Gaseous Release Source Term
May 22, 2008

Background – Grand Gulf Unit 3

COLA Rev 0 (2/27/08)

- Normal Gaseous Release Source Term
 - Established at ESP (“Composite” Source Term)
 - At COLA, ESP Source Term bounded DCD Rev 4 values
- Long-Term Dispersion (X/Q, D/Q)
 - No change from ESP values (ground level release); receptors confirmed at COLA
 - Not all X/Q, D/Q values were bounded by DCD. Analysis in COLA demonstrated compliance with Part 20 and 10 CFR 50 Appendix I; justified no departure (using DCD provision)
 - Dose results from ESP demonstrate compliance with guidelines of 10 CFR 50 Appendix I (using bounding ESP source and site characteristic X/Q, D/Q values)
- Control Room (Accident) X/Q
 - DCD values shown to be bounding relative to calculated, site-specific X/Q values using ESBWR design

Expected GG Unit 3 COLA Impact

- Normal Gaseous Release Source Term
 - ESP Source term remains bounding except for 1 isotope
 - DCD Rev 5 source term to be adopted for COLA (Variance)
- Long-Term Dispersion (X/Q, D/Q)
 - Use of 3 specific stack locations: Results in small changes in distances to receptors; X/Q and D/Q to be recalculated
 - Demonstrate compliance with Part 20, Table 2, Column 2 concentrations (using revised site boundary X/Q); no significant change expected regarding margin
 - Recalculation of doses, to demonstrate compliance with 10 CFR 50 Appendix I; no significant change expected regarding margin
- Control Room (Accident) X/Q
 - To be recalculated to support demonstration comparison with DCD Table 2.0-1 (Rev 5)

Expected Impact: GG Unit 3 COLA Changes

- Part 2
 - FSAR 1.8 (Variances)
 - FSAR 2.0 (Table 2.0-201; Control Room X/Q and long term X/Q, D/Q comparison with DCD)
 - FSAR Chapters 1 and 2 (Site plan drawings)
 - FSAR 2.3.2, 2.3.4, 2.3.5 (Control Room X/Q; long term X/Q, D/Q)
 - FSAR 11.3 (Gaseous effluent doses; cost/benefit analysis)
 - FSAR 12.2 (Gaseous release concentrations, resulting doses)
- Part 3
 - ER 2.1 (site plan drawings); ER 2.7 (Long term X/Q, D/Q); ER 3.0 (Table 3.0-201); ER 5.4 (gaseous pathway dose)
- Part 7
 - New variance: Adopting DCD normal gaseous source term
- Incorporate into next COLA Submission to these Parts