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Subject: **Transmittal of ESBWR DCD Tier 2 Markups Related to GEH Corrective Action – Chapter 12**

The purpose of this letter is to submit markups to the ESBWR DCD Tier 2, Chapter 12, resulting from GEH corrective action.

The Chapter 12, Subsection 12.3.4.1 markup changes "non-1E" to "nonsafety-related" and "vital" to "uninterruptible" for consistency with standard terminology used throughout the DCD.

Enclosure 1 provides the DCD Tier 2, Chapter 12 markup to be incorporated into the DCD, Rev. 8. The markup associated with this letter is enclosed within a box.

If you have any questions or require additional information, please contact me.

Sincerely,

Richard E. Kingston

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Vice President, ESBWR Licensing

Enclosure:

1. Transmittal of ESBWR DCD Tier 2 Markups Related to GEH Corrective Action – Chapter 12 – DCD Markup

cc:	AE Cubbage	USNRC (with enclosure)
	JG Head	GEH/Wilmington (with enclosure)
	DH Hinds	GEH/Wilmington (with enclosure)
	TL Enfinger	GEH/Wilmington (with enclosure)
	eDRF Section	0000-0119-4614

Enclosure 1

MFN 10-186

Transmittal of ESBWR DCD Tier 2 Markups Related to GEH Corrective Action
Chapter 12

DCD Markup

- Portable continuous air monitors (CAMs) provide a means to observe trends in airborne radioactivity concentrations. CAMs equipped with local alarm capability are used in occupied areas where needed to alert personnel to sudden changes in airborne radioactivity concentrations. Surveys to assess airborne radioactivity levels are performed with continuous air monitors (CAMs) and by taking grab samples (using portable low or high volume air samplers) with appropriate media for collecting particulate, iodine, gas, or tritium samples. In order to warn personnel of changing airborne conditions, CAM alarm set points are set at a fraction of the concentration values given in 10 CFR Part 20, Appendix B, Table 1, Column 3, for radionuclides expected to be encountered.

~~The in-plant airborne radiation monitoring instrumentation is located so that selected local areas and ventilation paths are monitored. Each location monitored is supplied with a local audible alarm (visual alarm in high noise areas) and the monitor has variable alarm set points. When appropriate, selected airborne radioactivity sampling points are located upstream of any ventilation filter trains to monitor representative radioactivity concentrations from the areas being sampled. Plant operating personnel are supplied with continuous information about the airborne radioactivity levels throughout the plant. The instruments used for monitoring airborne radioactivity are specified to detect the time integrated change of the most limiting particulate and iodine species equivalent to those concentrations specified in Appendix B of 10 CFR Part 20 in each monitored plant area within 10 hours. Locations are selected based on the potential for leakage into rooms and areas that contain radioactive processes that become airborne and where ersonnel occupancy is required for operation of the reactor plant.~~

- The radiation instrumentation that monitors airborne radioactivity is classified as nonsafety-related. Airborne radiation monitoring operational considerations, such as the procedures for operation and calibration of the monitors, as well as the placement of the portable monitors, are the COL Applicant's responsibility (COL 12.3-2-A).

12.3.4.1 ARM System Description

Every ARM channel consists of a gamma-sensitive detector and a digital area radiation processor; all channels are provided with local visual and audible alarms and local readouts. Where appropriate, additional readouts and alarms provided by local auxiliary units are utilized. The output signals from the detectors are digitized and multiplexed for transmission to digital radiation monitors for measurement and display. Also, the radiation signals are transmitted to the process computer for recording. Each radiation monitoring channel has two adjustable trip alarm circuits, one for high radiation and the other for downscale indication (loss of sensor input). Also, each area radiation monitor has a built-in self test capability that checks for gross failures and activates an alarm on a power failure or an inoperative monitor. Auxiliary units with local audible alarms are provided in selected local areas to provide for immediate warning in order to minimize occupational exposure. Each area radiation monitor is powered from a nonsafety-related uninterruptible ~~non-1E vital~~ 120 VAC power source, which is continuously available during loss of offsite power.