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Subject: **Transmittal of ESBWR DCD Tier 2, Chapter 9 Markups Related to GEH Internal Corrective Action**

The purpose of this letter is to submit markups to the ESBWR DCD, Tier 2, Chapter 9 and Appendix 9A, Revision 6, which are the result of GEH internal review. These markups will be incorporated into the DCD, Revision 7. The markup pages are contained in Enclosure 1. Changes associated with these corrective actions are enclosed within boxes on the markup pages. The changes are summarized below.

Affected Section(s)	Description of Change
S9.1.1.1, 1st paragraph	Corrected "5% Δk/k" to "5% Δk".
S9.1.1.2, 2nd paragraph	Corrected reference to ANSI/ANS-57.1 to ANSI/ANS-57.3 in last sentence.
S9.1.1.7, 1st paragraph	Added new bullet for compliance with 10 CFR 50.68(b): "Racks are loaded with fuel of the maximum fuel assembly reactivity".
S9.1.1.7, 2nd paragraph	Corrected "kinf < 1.35" to "kinf < 1.32".
S9.1.1.7	Added statement of compliance with 10 CFR part 50.68(b) under subheading "Criticality Control" as a new last paragraph.
S9.1.1.7, 3rd paragraph under "Structural Design"	Corrected phrase "An irradiated fuel assembly cannot be placed in a new fuel storage rack" to "An irradiated fuel assembly is not to be placed in a new fuel storage rack".
S9.1.2.1, 1st paragraph	Corrected reference to ANSI/ANS-57.1 to ANSI/ANS-57.2.
S9.1.2.1, 5th paragraph	Corrected reference to ANSI/ANS-57.1 to ANSI/ANS-57.2.
S9.1.2.2, 1st paragraph	Corrected "5% Δk/k" to "5% Δk".

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Affected Section(s)	Description of Change
S9.1.2.4, 3rd paragraph	Revised S9.1.2.4, 3rd paragraph to delete reference to features of legacy rack design and add brief description and pointer to References.
S9.1.2.8, 1st paragraph	Corrected "5% Δk/k" to "5% Δk".
S9.1.2.8, 3rd paragraph	Added a statement of compliance with 10 CFR part 50.68(b).
S9.1.2.8, 1st paragraph under "Structural Design and Material Compatibility Requirements:"	Added new introductory statement to point to References and deleted the second bullet which is an incorrect statement of fact, not a design requirement.
S9.1.4.18, 5th paragraph	Corrected to delete reference of compliance with GDC 62 and added alternate statement that GDC 62 compliance is under COL 9.1-4-A.
S9.5.1.16	Removed inappropriate reference to COL holder items under COL Information section.
F9A.2-10, F9A.2-11, F9A.2-18, F9A.2-19, F9A.2-24, F9A.2-32	Revised to specifically identify the Finished Ground Level Grade Elevation of 4500. **Note**: These markups are to security-related figures and are not included with this letter.

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

Sincerely,

Richard E. Kingston

Richard E. Kingston
Vice President, ESBWR Licensing

Enclosure:

1. Transmittal of ESBWR DCD Tier 2, Chapter 9 Markups Related to GEH Internal Corrective Action – DCD Markups

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	0000-0112-1394
		0000-0112-3054
		0000-0110-5411, Rev. 1

Enclosure 1

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Transmittal of ESBWR DCD Tier 2, Chapter 9 Markups Related to GEH Internal Corrective Action

DCD Markups

9. AUXILIARY SYSTEMS

9.1 FUEL STORAGE AND HANDLING

Upon receipt of the new fuel bundles at the reactor site, each fuel bundle container is uncrated from its shipping crate and the fuel bundle container is raised to the refueling floor in the Fuel Building (FB). The fuel bundles are removed from the container and moved to the new fuel inspection stand where the fuel bundles are inspected and the fuel channels are installed to create fuel assemblies.

The fuel assemblies are then placed in the Spent Fuel Pool for transfer to the Reactor Building (RB) Buffer Pool via the Inclined Fuel Transfer System (IFTS). The newly channeled fuel assemblies are then moved to the new fuel storage racks in the RB buffer pool until time to move them into the reactor. New fuel can be transferred through the IFTS during normal operation.

There are three areas where new and spent fuel are stored. In the FB there are spent fuel storage racks for storing new or spent fuel. In the RB there are new fuel storage racks for storing new fuel and a small array of spent fuel racks in a deep pit in the buffer pool for temporary storage of spent fuel.

The new fuel storage racks in the buffer pool can store a minimum of 476 new fuel assemblies. The fuel assemblies are stored in underwater storage racks located adjacent to the reactor well. The racks are side loading and are accessed using the refueling machine.

Spent fuel removed from the reactor vessel must be stored underwater. There are two locations containing spent fuel storage racks. Buffer racks in the deep pit area of the RB buffer pool are used to temporarily store discharged fuel or fuel to be returned to the reactor during fuel shuffles. Movement of spent fuel in the buffer pool or through the IFTS is limited to reactor shutdown. Spent fuel cannot be stored in the buffer pool during normal operation. Spent fuel racks for long-term storage of spent fuel are located in the FB. These spent fuel storage racks are located at the bottom of the storage pools at a depth sufficient to provide adequate radiological shielding. The spent fuel storage pool water is processed by the Fuel and Auxiliary Pools Cooling System (FAPCS), which provides cooling to the spent fuel and maintains the spent fuel storage pool water quality. The buffer pool deep pit storage area in the RB can store a maximum of 154 fuel assemblies. Together, the spent fuel storage racks provided in the spent fuel storage pool and buffer pool deep pit have the capacity to store the fuel assemblies resulting from ten calendar years of operation plus one full core offload. However, the structures (including pool size) and systems are designed for expansion to store spent fuel assemblies resulting from 20 years of operation plus one full core offload.

9.1.1 New Fuel Storage

9.1.1.1 Design Bases

Nuclear Design

The new fuel storage racks in the buffer pool are designed to assure that the fully loaded array is subcritical by at least 5% $\Delta k/k$.

Monte Carlo techniques are employed in the calculations performed to assure that the effective multiplication factor (k_{eff}) does not exceed 0.95 under all normal and abnormal conditions.

The biases between the calculated results, experimental results, and the uncertainty in the calculation, are taken into account as part of the calculation procedure to assure that the specific k_{eff} limit is met.

9.1.1.2 Storage Design

The new fuel storage racks in the buffer pool can store a minimum of 476 new fuel assemblies.

The new fuel storage rack design complies with the requirements of General Design Criterion (GDC) 2 by meeting the guidance of RGs 1.13, 1.29, and 1.117. The new fuel storage racks are located within a Seismic Category I structure that is designed to withstand the effects of extreme wind and tornado missiles. In addition, the racks conform to the applicable provisions of industry standards American Nation Standards Institute/American Nuclear Society 57.~~1~~3 (ANSI/ANS 57.~~1~~3) and RG 1.13 and therefore meet the requirements of GDC 61 and GDC 62.

9.1.1.3 Mechanical and Structural Design

The new fuel storage racks contain storage space in the RB buffer pool for a minimum of 476 new fuel assemblies. They are designed to withstand all credible static and dynamic loadings.

The racks are designed to protect the fuel assemblies and fuel bundles from excessive physical damage under normal and abnormal conditions as when struck by a dropped fuel assembly or other equipment.

The racks are constructed in accordance with the Quality Assurance (QA) Requirements of 10 CFR 50, Appendix B.

The racks are classified as nonsafety-related and Seismic Category I.

9.1.1.4 Material Considerations

Material used in the fabrication of the new fuel storage racks is limited to the use of stainless steel in accordance with the latest issue of the applicable American Society for Testing and Materials (ASTM) specifications at the time of equipment order. The new fuel racks are fabricated from Type 304L stainless steel, which conforms to ASTM A240/A240M.~~-07e1~~ The appropriate weld wire for the Type 304L components (E308L or ER308L) is utilized in the fabrication process. Materials are chosen for their corrosion resistance and their ability to be formed and welded with consistent quality.

9.1.1.5 Dynamic and Impact Analysis

A standard dynamic analysis, using the appropriate response spectra, is performed to demonstrate compliance to design requirements. Once the response spectrum analysis has been performed for each direction, the modal responses are combined according to the grouping method established in Regulatory Guide 1.92, Revision 1, as allowed by Regulatory Guide 1.92, Revision 2. The residual rigid response of the missing mass modes is addressed in Reference 9.1-1. The input excitation for these analyses utilizes the horizontal and vertical response spectra provided in Section 3.7.

Vertical impact analysis is performed because the fuel assembly is held in the storage rack by its own weight without any mechanical hold-down devices. Reference 9.1-1 provides the documentation for the dynamic and impact analyses.

9.1.1.6 Facilities Description (New Fuel Storage)

Pool Storage

The new fuel storage racks in the RB buffer pool can store a minimum of 476 new fuel assemblies. The racks have double rows of storage positions for assemblies that are side loaded into the storage racks. Because the racks are open on the side to allow side loading, the weight of the fuel assemblies placed in the storage position actuates a mechanism that restrains the assemblies in position. The racks are floor mounted.

9.1.1.7 Safety Evaluation

Criticality Control

The design of the new fuel storage racks provides for an k_{eff} for storage conditions equal to or less than 0.95. To ensure that design criteria are met, the following normal and abnormal new fuel storage conditions were analyzed:

- Racks are loaded with fuel of the maximum fuel assembly reactivity;
- Normal positioning in the new fuel array; and
- Eccentric positioning in the new fuel array.

The new fuel storage area accommodates fuel ($k_{inf} \le$ 1.3~~5~~2 at 20°C [68°F] in standard core geometry) with no safety implications.

New fuel storage racks criticality control meets the requirements of 10 CFR Part 50.68(b). Criticality analysis is documented in Reference 9.1-2.

Structural Design

The new fuel storage racks are designed to meet Seismic Category I requirements. Stresses in a fully loaded rack do not exceed stresses specified by the applicable American Society of Mechanical Engineers (ASME) Codes and Standards when subjected to seismic loads.

The storage rack structure is designed to withstand the impact resulting from a falling fuel assembly.

Procedural fuel handling requirements and equipment design dictate that no more than one bundle at a time can be handled over the storage racks. The structural arrangement is such that no lateral displacement of the fuel occurs; therefore, subcritical spacing is maintained. An irradiated fuel assembly ~~cannot~~is not to be placed in a new fuel storage rack. The Combined License (COL) applicant shall describe the programs that address fuel handling operations, including criticality safety (COL 9.1-4-A).

The racks are fabricated from material specified to ASTM standards.

Protection Features of the New Fuel Storage Facilities

The new fuel storage racks are housed in the RB. The RB is Seismic Category I and designed for natural phenomena such as tornadoes, tornado missiles, floods and high winds.

The refueling machine is used to move fuel in the RB. It contains interlocks to prevent overloads from being applied to the bail of the fuel assembly. Thus, the transfer devices used for new fuel handling to the new fuel rack cannot impose excessive uplift loads on the rack.

Should it become necessary to move major loads along or over the pools, administrative controls require that the load be moved over the empty portion of the buffer pool and avoid the area of the new fuel racks. Procedures are written for fuel handling. The COL applicant shall describe the programs that address fuel handling operations (COL 9.1-4-A).

9.1.2 Spent Fuel Storage

9.1.2.1 Design Bases

The spent fuel storage design complies with the requirements of GDC 2, 4, 61, 62, and 63 by meeting the applicable guidance of Standard Review Plans 9.1.1 and 9.1.2; RGs 1.13, 1.29, 1.115, and 1.117; and ANSI/ANS 57.2~~1-1992~~ as follows:

GDC 2

The spent fuel storage facilities and the structure within which they are housed are designed to protect against the effects of natural phenomena without loss of safety function, in accordance with the guidance of RGs 1.13, 1.29, and 1.117, and comply with GDC 2 requirements.

GDC 4

In accordance with the guidance of RG 1.13, the spent fuel storage facilities are designed to protect the fuel from damage caused by dropping of fuel assemblies, bundles, or other objects onto stored fuel. As noted above in the discussion of compliance with GDC 2, the FB and the spent fuel storage components which it houses are designed to protect against the effects of tornado winds, including tornado missiles. Because of the favorable orientation of the turbine shafts, spent fuel storage components are located outside the turbine missile low-trajectory strike zone. The spent fuel storage system and components are adequately protected against dynamic effects, in accordance with the guidance of RGs 1.13, 1.115, and 1.117, and comply with GDC 4 requirements.

GDC 61

Compliance with GDC 61 is demonstrated by conformance with applicable provisions of RG 1.13. These include design to control airborne release of radioactive material; design of drains, gates, and weirs to prevent drainage of coolant inventory below an adequate shielding depth; provision of adequate coolant flow to spent fuel racks; and a system for detecting and containing spent fuel pool liner leakage. These design features have been included, in accordance with the applicable guidance of RG 1.13, and comply with GDC 61 requirements.

GDC 62

Criticality in the spent fuel storage pool is prevented by the presence of fixed neutron absorbing material to assure k_{eff} does not exceed 0.95 under all normal and abnormal conditions which include earthquake and load drop. The spent fuel storage system is designed to the applicable provisions of ANSI/ANS 57.2~~1~~, which specify criteria for compliance with GDC 62. Individual fuel racks are spaced less than one fuel assembly apart so that a fuel assembly cannot be inserted between racks. The spent fuel storage system conforms to the applicable provisions of RG 1.13 and ANSI/ANS 57.2~~1~~ and complies with GDC 62 requirements.

GDC 63

The fuel storage monitoring section of GDC 63 applies to Sections 9.4.2 and 11.5. Instrumentation associated with spent fuel storage conforms to the guidance of RG 1.13 and complies with GDC 63 requirements.

9.1.2.2 Nuclear Design

New and spent fuel storage racks are capable of maintaining fuel subcritical. Key design features associated with maintaining subcriticality are documented in Reference 9.1-2. A full array in the loaded spent fuel rack is designed to be subcritical by at least 5% Δk/k. Neutron-absorbing material (borated stainless steel in accordance with ASTM A887-89), as an integral part of the design, is employed to assure that the calculated k_{eff}, including biases and uncertainties, does not exceed 0.95 under all normal and abnormal conditions.

Monte Carlo techniques are employed in the calculations performed to assure that k_{eff} does not exceed 0.95 under all normal and abnormal conditions (see Reference 9.1-2).

The biases between the calculated results and experimental results, as well as the uncertainty involved in the calculations, are taken into account as part of the calculative procedure to assure that the specific k_{eff} limit is met.

9.1.2.3 Storage Design

The fuel storage racks provided in the Spent Fuel Pool in the FB provide for storage of 3504 irradiated fuel assemblies, which is enough storage capacity for 10 calendar years of plant operation. The fuel storage racks in the RB buffer pool deep pit can hold a maximum of 154 spent fuel assemblies. Together, the spent fuel storage racks provided in the spent fuel pool and buffer pool deep pit, accommodate the spent fuel resulting from 10 calendar years of plant operation plus one full-core offload.

9.1.2.4 Mechanical and Structural Design

[The spent fuel storage racks in the RB buffer pool and in the Spent Fuel Pool in the FB contain storage space for fuel assemblies. A standard dynamic analysis using the appropriate response spectra is performed to demonstrate compliance to design requirements. Once the response spectrum analysis has been performed for each direction, the modal responses are combined according to the grouping method established in Regulatory Guide 1.92, Revision 1, as allowed by Regulatory Guide 1.92, Revision 2. The residual rigid response of the missing mass modes is addressed in Reference 9.1-1. They are designed to withstand all credible static and dynamic loadings. The racks are designed to protect the fuel assemblies from excessive physical damage which may cause the release of radioactive materials in excess of RG 1.183 requirements, under normal and abnormal conditions caused by impact from fuel assemblies, or other equipment.

The Spent Fuel Pool and buffer pool are reinforced concrete structures with a stainless steel liner. Fuel storage racks and pool liners are designed to meet Seismic Category I requirements. Pool liner and anchorage are designed to the same loads and load combinations as the pool concrete structure in accordance with Table 3.8-15, except that load factors for all cases are equal to 1.0, and the acceptance criteria follow ASME Section III, Division 2, CC-3700. Pool liners are evaluated to ensure structural integrity under fuel handling accidents. The bottoms of the pool gates are at least 3.05 m (10.0 ft) above TAF to provide adequate shielding and cooling. Pool fill lines enter the pool above the safe shielding water level and overflow weirs are located above normal water level. Redundant anti-siphoning ~~vacuum breakers~~provisions are ~~located~~included ~~at the high point of the~~on pool circulation lines to preclude a pipe break from siphoning the water from the pool and jeopardizing the safe water level of 3.05m (10.0 ft) above TAF.

The racks ~~include individual solid tube storage compartments, which provide lateral restraints over the entire length of the fuel assembly or bundle~~are described in Reference 9.1-1. The weight of the fuel assembly or bundle is supported axially by the rack ~~fuel support~~. ~~Lead-in guides at the top of the storage spaces provide guidance of the fuel during insertion.~~There are no unanalyzed locations within a fuel rack or array of fuel racks. Individual racks are spaced less than one fuel assembly apart so that a fuel assembly cannot be inserted between racks. In the event that a fuel assembly is lowered adjacent to an exterior rack, this configuration is analyzed.

Materials used for construction are specified in accordance with the latest issue of applicable ASTM specifications at the time of equipment order. The racks are constructed in accordance with the QA requirements of 10 CFR 50, Appendix B.

The structural integrity of the rack is demonstrated for the loads and load combinations described below using linear elastic design methods.

The applied loads to the rack are as follows:

- Dead loads - weight of rack and fuel assemblies plus the hydrostatic loads;
- Live loads - effect of lifting an empty rack during installation;
- Thermal loads - effects caused by pool temperature changes occurring as a result of normal operating or abnormal conditions, as applicable;
- Dynamic loads (Square Root of the Sum of the Squares [SRSS] combination of Seismic, Loss-of-Coolant-Accident [LOCA],Safety Relief Valve [SRV] loads);
- Fuel drop load - effect of an accidental drop of the heaviest fuel assembly or bundle from the maximum possible height; and
- Stuck fuel load - upward force on the rack caused by a postulated stuck fuel assembly.

The load combinations considered in the rack design are as follows:

- Dead plus live loads;
- Dead plus live plus thermal loads;
- Dead plus live plus thermal plus stuck fuel loads;
- Dead plus live plus thermal plus dynamic loads; and
- Dead plus live plus fuel drop loads.

Stress analyses are performed by classical methods based upon shears and moments developed by the dynamic method. Using the given loads, load conditions and analytical methods, stresses are calculated at critical sections of the rack and compared to acceptance criteria referenced in ASME Boiler and Pressure Vessel (B&PV) Code Section III, Subsection NF. In addition, the spent fuel assemblies. The deep pit for the storage of spent fuel in the rack is designed such that the depth of the cavity allows the fuel to be placed in the rack with sufficient margin below the rack for natural convection cooling to occur and that the top of the active fuel remains below the top of the cavity. The spent fuel storage racks are top entry racks designed to preclude the possibility of criticality under normal and abnormal conditions.

Together, the spent fuel storage racks in the Spent Fuel Pool and the buffer pool deep pit provide storage for spent fuel received from the reactor vessel resulting from ten calendar years of operation plus one full-core offload. The cavity for the storage of spent fuel in the rack is designed such that the depth of the cavity allows the fuel to be placed in the rack with sufficient margin below the rack for natural convection cooling to occur and that the top of the active fuel remains below the top of the cavity. The spent fuel storage racks are top entry racks designed to preclude the possibility of criticality under normal and abnormal conditions.

On a complete loss of the FAPCS active cooling capability and under the condition of maximum heat load associated with 20 years of fuel storage and a full-core offload, sufficient quantity of water is available in the Spent Fuel Pool above the top of active fuel (TAF) level to allow boiling for 72 hours and still have the TAF submerged under water.

9.1.2.8 Safety Evaluation

Criticality Control

The spent fuel storage racks are designed to assure that the fully loaded array is subcritical by at least 5% Δk/~~k~~.

Monte Carlo techniques are employed in the calculations performed to assure that k_{eff} does not exceed 0.95 under all normal and abnormal conditions.

The biases between the calculated results, experimental results, and the uncertainty in the calculation, are taken into account as part of the calculative procedure to assure that the specific k_{eff} limit is met. Spent fuel storage racks criticality control meets the requirements of 10 CFR Part 50.68(b). Criticality analysis is documented in Reference 9.1-2.

Structural Design and Material Compatibility Requirements:

The racks are described in References 9.1-1 and 9.1-2.

- The support structure allows sufficient pool water flow for natural convection cooling of the stored fuel and allows the rack material temperatures to stay within limits.
- ~~The racks include individual solid tube storage compartments, which provide lateral restraints over the entire length of the fuel assembly or bundle.~~
- The racks are fabricated from materials specified in accordance with the latest issue of applicable ASTM specifications at the time of equipment order.
- The racks are designed to withstand the impact force generated by the vertical free-fall drop of a fuel assembly and its handling tool from the maximum height expected during normal fuel handling (See Reference 9.1-1 for analysis).
- The rack is designed to withstand a pull-up force in the event a fuel assembly is stuck.

- Install equipment pool gate and buffer pool gates ;
- Drain reactor cavity;
- Install and tighten reactor vessel head;
- Install reactor vessel insulation;
- Perform inservice leak test (ISLT - Equipment is tagged out and inoperable during this test, which is a critical path item);
- Remove tags and restore valve lineups;
- Install drywell head;
- Flood reactor cavity;
- Remove equipment pool gate;
- Perform startup operations check; and
- Check final drywell closeout.

9.1.4.18 Safety Evaluation of Fuel Handling System

Fuel servicing equipment is discussed in Subsection 9.1.4.6 and refueling equipment is discussed in Subsection 9.1.4.5. In addition, the summary safety evaluation of the fuel handling system is described in the following paragraphs.

The refueling machine and fuel handling machine are designed to prevent them from becoming unstable and toppling into pools during a SSE. Interlocks, as well as limit switches, are provided to prevent accidental movement of the grapple mast into pool walls.

The grapple on both the refueling machine and fuel handling machine is hoisted to its retracted position by redundant cables inside the mast and is lowered to full extension by gravity. The retracted position is controlled by both interlocks and physical stops to prevent raising the fuel assembly above the normal stop position required for safe handling of the fuel. The operator can observe the exact grapple position over the core by a display screen at the operator console.

The results of the rack load drop analysis are contained in Reference 9.1-1.

The fuel handling system complies with the guidance of RGs 1.13, 1.29, 1.117, and ANSI/ANS 57.1, Design Requirements for Light Water Reactor Fuel Handling Systems, in order to handle fuel units and control components in a safe and reliable manner, thus meeting the requirements of General Design Criteria 2, and 61, and 62 of 10 CFR 50, Appendix A. The licensee program and procedures for fuel handling operations (COL 9.1-4-A) address criticality safety to satisfy the requirements of 10 CFR 50, Appendix A, General Design Criterion 62. The fuel handling system and its components are located within a Seismic Category I structure that is designed to withstand the effects of extreme wind and tornado missiles.

9.1.4.19 Inspection and Testing Requirements

Inspection

The refueling and fuel handling machines have additional quality requirements that identify features that require specific QA verification of compliance to drawing requirements.

conformance to design requirements. Installation of portions of the system where performance cannot be verified through post modification tests, such as penetration seals, fire retardant coatings, cable routing, and fire barriers is inspected. Inspections are performed by individuals knowledgeable of fire protection design and installation requirements. Open flame or combustion generated smoke are not to be used for leak testing or similar procedures such as air flow determination. Inspection and testing procedures address the identification of items to be tested or inspected, responsible organizations for the activity, acceptance criteria, documentation requirements and signoff requirements.

The Fire Protection System, including fire detection system, auto suppression system, and manual suppression equipment, is periodically inspected. In addition, systems which support fire fighting, such as emergency breathing and auxiliary equipment, emergency lighting and communication equipment, are periodically inspected. [DBH2113]

Fire Protection materials subject to degradation, such as fire stops, seals, and fire retardant coatings are visually inspected periodically to assure they are not degraded or damaged. Fire hoses are hydrostatically tested in accordance with NFPA-1962. Hoses stored in outside hose stations are tested annually and interior standpipe hoses are tested every three years.

The Fire Protection System is periodically tested in accordance with plant procedures. Fire protection equipment, emergency lighting, and communication equipment are tested periodically to ensure that the equipment functions properly and continues to meet the design criteria.[DBH2114] Testing includes periodic operational tests and visual verification of damper and valve positions. Fire doors and their closing and latching mechanisms are also included in these procedures. Fire doors separating areas containing safety-related equipment [CS2115]are self-closing or provided with closing mechanisms and are inspected semiannually to verify that the automatic hold open, release and closing mechanisms and latches are operable. Watertight and missile resistant doors are not provided with closing mechanisms. Fire doors with automatic hold open and release mechanisms are inspected daily to verify that the doorways are free of obstructions.

Fire doors separating fire areas are normally closed and latched. Fire doors that are locked closed are inspected weekly to verify position. Fire doors that are closed and latched are inspected daily to assure that they are in the closed position. However, fire doors that are closed and electrically supervised at a continuously manned location are not inspected.

9.5.1.15.9 Quality Assurance

Quality assurance controls are applied to the activities involved in the design, procurement, installation, and testing and the administrative controls [DBH2116]of fire protection systems for safety-related areas, in accordance with the programs outlined in Chapter 17. The COL applicant shall provide details of the QA program for the fire protection program (COL 9.5.1-11-A).

9.5.1.15.10 Emergency Planning

Emergency planning is described in Section 13.3.

9.5.1.16 COL Information

The following site-specific items shall be determined by the COL applicant/~~holder~~:

9.5.1-1-A Secondary Firewater Storage Source