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Subject: **Response to NRC Request for Additional Information Letter No. 7 for the ESBWR Design Certification Application – Process Radiation Monitoring System – RAI Numbers 11.5-4 through 11.5-21, 7.5-1, and 7.5-2**

Enclosure 1 contains GE's response to the subject NRC RAIs transmitted via the Reference 1 letter.

If you have any questions about the information provided here, please let me know.

Sincerely,

David H. Hinds  
Manager, ESBWR

Reference:

1. MFN 06-043, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 7 Related to ESBWR Design Certification Application*, January 26, 2006

Enclosure:

1. MFN 06-066 – GE Response to NRC Request for Additional Information Letter No. 7 for the ESBWR Design Certification Application – Process Radiation Monitoring System – RAI Numbers 11.5-4 through 11.5-21, 7.5-1, and 7.5-2

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MFN 06-066  
Enclosure 1

**ENCLOSURE 1**

**MFN 06-066**

**GE Response to NRC Request for Additional Information  
Letter No. 7 for the ESBWR Design Certification Application  
Process Radiation Monitoring System  
RAI Numbers 11.5-4 through 11.5-21, 7.5-1, and 7.5-2**

NRC RAI 11.5-4

*The PRMS subsystems listed on page 11.5-2 of the DCD are not consistent with those listed in Table 11.5-3 of the DCD. Confirm whether the Containment Overpressure Protection System Discharge RMS is a relevant system. Update text accordingly.*

GE Response

The names of the PRM subsystems has been made consistent between page 11.5-2 and Table 11.5-3 in Revision 1 of the DCD issued February 5, 2006. The Containment Overpressure Protection System Discharge RMS does not pertain to ESBWR and as such has been removed from the text and tables in Revision 1 of the DCD.

NRC RAI 11.5-5

*The list of applicable design bases criteria provided in DCD Section 11.5.2 is not consistent with Section 11.5.II of the SRP. The design bases fail to identify design criteria to monitor non-radioactive systems for potential cross contamination through interfaces with radioactive systems. The text omits references to Regulatory Guide 4.15, and Part 50.34a and Part 50.36a, and App. B to Part 20. Also, note that throughout Section 11.5, the text either lacks references for or improperly refers to App. B, Table 2 (Col. 1 and Col. 2) criteria. For example, citations to Table 2 (including Col. 1 and Col. 2) are omitted or are inconsistent with the topics being discussed in the text or with the current Part 20. Update text accordingly.*

GE Response

The design bases criteria provided in Section 11.5.2 has been made consistent with section 11.5.II of SRP 11.5 in Revision 1 of the DCD issued February 5, 2006. Information pertaining to radioactive monitoring of potential cross contamination has been added to section 11.5.2.2 in Revision 1. References to RG 4.15, Part 50.34a, and App. B to Part 20 have been added to Section 11.5.2. Section 11.5 has been updated in Revision 1 of the DCD as necessary to refer to the proper regulations and standards when appropriate to the subject being discussed.

NRC RAI 11.5-6

*The listing of PRMS subsystems described in Section 11.5.3 of the DCD is not consistent with those listed in Table 11.5-3 of the DCD. Descriptions of the following subsystems are not included in this section: Plant Stack; and Fuel Building Ventilation Stack. Update text accordingly.*

GE Response

The listing of PRMS subsystems in Section 11.5.3 and Table 11.5-3 has been made consistent in Revision 1 of the DCD issued February 5, 2006.

NRC RAI 11.5-7

*The descriptions of isokinetic sampling systems in DCD Section 11.5.3 are inconsistent among the Turbine Building Ventilation Stack and Radwaste Building Ventilation Exhaust, and missing for the Plant Stack and Fuel Building Ventilation Stack. Given that a new approach is used in the revised ANSI/HPS N13.1-1999 standard, confirm that the design bases for all relevant sampling systems used to monitor effluent releases will comply with the performance based approach of the standard. For example, the standard no longer relies on prescriptive rules used for selecting sampling locations, but relies on criteria defining locations with acceptable flow mixing from which representative samples can be extracted. Update text and design bases accordingly.*

GE Response

The discussion concerning isokinetic sampling has been made consistent for those subsystems requiring representative sampling in Revision 1 of the DCD issued February 5, 2006. Where required, a reference to ANSI/HPS N13.1-1999 has been made in each subsystem subsection.

NRC RAI 11.5-8

*The dynamic detection ranges listed in DCD Table 11.5-2 for gaseous effluent instrumentation should be qualified given the competing objectives of Regulatory Guides 1.21 and 1.97. For example, the reported dynamic range for the Plant Stack is stated to cover 13 orders of magnitude. This instrumentation is required to confirm compliance as well with airborne effluent limits of App. B to Part 20. As is stated in Regulatory Guide 1.97, it is recognized that a single instrument is not expected to cover the entire expected response range, but nevertheless the accuracy of the system must still be adequate in demonstrating compliance with regulatory limits. Accordingly, confirm how instrumentation selected to routinely monitor gaseous effluent releases will provide the appropriate level of accuracy in demonstrating compliance with 10 CFR Part 20 App. B limits over the stated operational ranges. Update text and DCD Tables 11.5-1 and 11.5-2 accordingly.*

GE Response

A discussion has been provided in Revision 1 of the DCD issued February 5, 2006 in the appropriate subsections of the text, stipulating that, if the capability of the subsystem is

such that multiple indications are needed, sufficient decade overlap, via different instruments, is provided for measurement and display.

With regard to how the instrumentation selected will provide the required accuracy over both the normal and accident ranges, it has been stipulated in Revision 1 of the DCD issued February 5, 2006 that the effected subsystem be designed to meet the requirements of both 10 CFR 20.1203 for effluent releases and Regulatory Guide 1.97 for accident effluent releases.

#### NRC RAI 11.5-9

*The data presentation in DCD Table 11.5-2 is inconsistent and incomplete. In describing instrument detection ranges and expected activity concentrations, the table applies inconsistent use of exponential notations. For example, mixed notations are used for the detection range of the Turbine Building HVAC Exhaust and Turbine Building Compartment Area Exhaust. Also, it is not clear as whether the lower values of the cited range are expressed as a negative or positive exponents. The concentrations reported as "Expected Activity" are expressed as "0" and "negligible" in several instances. It is not clear if such designations refer to undefined lower limits of detection or other undefined instrument threshold values. The footnotes (\* and \*\*) for the "Dynamic Detection Range" and "Expected Activity" headers qualify the entries as being "typical," "estimated," or "will be updated on a plant specific basis." Given that Chapter 12 of the DCD presents expected gaseous source terms and process and effluent stream concentrations, there is a need to reconcile "Expected Activity" levels with those presented in DCD Section 12.2.2 for the nuclides listed in DCD Table 11.5-2. There is a need to provide a legend for each descriptor listed under the "Alarms and Trips" column. Provide legends and criteria defining "DNSC," "High," "High-High," "INOP," and "Abnormal Flow." Update table and text accordingly.*

#### GE Response

In Revision 1 of the DCD issued February 5, 2006, Table 11.5-2 has been modified so that the expression of values is consistent throughout the table. In addition, it has been noted that the activity levels are expected to be at the subsystem's lower limit of detection and that the determination of each lower limit is to be determined by the COL applicant. In Revision 1 of the DCD, a reference has been made to Section 12.2 for the expected amounts of various processes and effluents where they are known. The values to be used in Table 11.5-2 will ultimately be based on site specific conditions and operating characteristics of each installed effluent radiation monitoring subsystem.

With respect to the reporting of the dynamic detection ranges, these values have been noted as being estimates and that they will be adjusted according to plant unique configurations and radiation background.

In Revision 1 of the DCD, the abbreviations and acronyms used in Table 11.5-2 have been updated.

NRC RAI 11.5-10

*Update DCD Table 11.5-3 appropriately given the specific resolution of each applicable comment noted in the above RAI.*

GE Response

Table 11.5-3 has been adjusted according to the resolutions provided from the comments in RAI 11.5-9.

NRC RAI 11.5-11

*The data presentation in DCD Table 11.5-4 is inconsistent and incomplete. In describing instrument detection ranges and expected activity concentrations, the table applies inconsistent use of exponential notations. For example, mixed notations are used for the detection range of the Liquid Radwaste Discharge subsystem. Also, it is not clear as to whether the lower value of the cited range is expressed as a negative or positive exponent. The footnotes (\* and \*\*) for the "Dynamic Detection Range" and "Expected Activity" headers qualify the entries as being "typical," "estimated," or "will be updated on a plant specific basis." Given that Section 12 presents expected gaseous source terms and process and effluent stream concentrations, there is a need to reconcile "Expected Activity" levels with those presented in Section 12.2.2 for radionuclides listed in Table 11.5-4. There is a need to provide a legend for each descriptor listed under the "Alarms and Trips" column. Provide legends and criteria defining "DNSC," "High," "High-High," "INOP," and "Abnormal Flow." Update table and text accordingly.*

GE Response

In Revision 1 of the DCD issued February 5, 2006, Table 11.5-4 has been modified so that the expression of values is consistent throughout the table. In addition, it has been noted that the activity levels are expected to be at the subsystem's lower limit of detection and that the determination of each lower limit is to be determined by the COL applicant. A reference has been made to Section 12.2 for the expected amounts of various processes and effluents where they are known. The values to be used in Table 11.5-4 will ultimately be based on site specific conditions and operating characteristics of each installed effluent radiation monitoring subsystem.

With respect to the reporting of the dynamic detection ranges, these values have been noted in Revision 1 of the DCD as being estimates and that they will be adjusted according to plant unique configurations and radiation background.

In Revision 1 of the DCD, the abbreviations and acronyms used in Table 11.5-4 have been updated.

NRC RAI 11.5-12

*DCD Table 11.5-5 lists "evaporator bottoms" as a liquid sample processing stream, however, the use of an evaporator is not described in DCD Section 11.2.2. The footnote (\*) defining the frequency of daily grab sample collection should be revised from "5 times per week" to 7 times per week. A comparison of the types of analyses listed in DCD Table 11.5-5 is not consistent with that shown in DCD Table 11.5-7, e.g., gross alpha, Sr-89, Sr- 90, tritium, and fission gases are not included. Update text accordingly.*

GE Response

In Revision 1 of the DCD issued February 5, 2006, the entries in Table 11.5-5 have been updated to be consistent with DCD Section 11.2.2. The sampling frequencies, and isotopes to be sampled, have been made consistent with the information presented in 11.5-7.

NRC RAI 11.5-13

*Based on a review of DCD Table 11.5-7 footnotes qualifying conditions for liquid waste sampling and analysis, it is not clear if releases will always be conducted on a batch basis and, as a result, continuous releases are excluded from the design basis. Confirm whether this is the intent of the design bases and, if so, state that the related provisions of Regulatory Guide 1.21 and Section 11.5.II of the SRP do not apply. Update text in this table and DCD Section 11.5.1 accordingly.*

GE Response

In Revision 1 of the DCD issued February 5, 2006, a footnote to Table 11.5-7 has been added, explaining that ESBWR Radwaste is processed on a batch basis and that if a tank is to be discharged, an analysis will be performed on each batch. It has also been noted that if a tank is not to be discharged, an analysis will be performed periodically to evaluate equipment performance. Information pertaining to RG 1.21 and its relationship to these discharges has been added to Table 11.5-7.

NRC RAI 11.5-14

*DCD Table 11.5-7 provides an incomplete listing of sources of liquid waste streams as compared to that described in DCD Section 11.2.2. The following streams are not listed: Chemical Drains, Equipment Drains, Floor Drains, and DW Sump LCW/HCW Discharge. The nomenclature of the "Liquid Radwaste Effluent" is different than that given in DCD Section 11.2.2. The types of analyses listed in DCD Table 11.5-7 are not consistent with that shown in DCD Table 11.5-5 - see prior comment. Provide a description of the proportional composite sampling system footnoted (\*\*) in this table. Confirm that all tank liquid waste samples used for analysis will be taken as*

*representative samples and that each tank volume will be re-circulated in accordance with the guidance of Section 11.5.II of the SRP. Update text accordingly.*

#### GE Response

In Revision 1 of the DCD issued February 5, 2006, Table 11.5-7 has been updated to reflect the major liquid streams so that the information is consistent with the information contained in Section 11.2.2. The nomenclature has been made consistent with that given in Section 11.2.2. Reference to "proportional composites" has been removed from Table 11.5-7 since it is not applicable to ESBWR. Information has been added to Table 11.5-7 that the ESBWR Liquid Waste Management System is designed to recycle 100% of the liquid radwaste, thus providing a zero liquid release. It is also stated that the liquid waste system has provisions for off-site discharge and if liquid radwaste is discharged, the sampling and analysis will be done per the requirements of RG 1.21.

#### NRC RAI 11.5-15

*DCD Table 11.5-8 provides an incomplete listing of sources gaseous waste streams as compared to that described in DCD Section 11.5.3. The following streams are not listed: Reactor Building HVAC Exhaust Vent, Fuel Building Ventilation Stack, Refueling Handling Area Air Exhaust, and Plant Stack. The nomenclature of the "Offgas Exhaust Discharge" system is different than that shown in DCD Section 11.5.3. Confirm whether the single asterisk (\*) footnote correctly describes the "Control Building" as one source of gaseous radiological effluents. Update text accordingly.*

#### GE Response

In Revision 1 of the DCD issued February 5, 2006, Table 11.5-8 has been updated to include all the gaseous streams that are discussed throughout section 11.5. Nomenclature has been standardized throughout the text and tables as appropriate. The "Control Building" has been removed from Table 11.5-8 since it is not a source of gaseous effluents.

#### NRC RAI 11.5-16

*DCD Table 11.5-8 is inconsistent with Regulatory Guide 1.21 guidance for gaseous effluents as it does not differentiate between batch and continuous releases, nor address principal fission and activation gases. Also, this table does not provide the basis for the listed analytical sensitivities given the threshold levels cited in the regulatory guide. Update text accordingly and ensure consistency with the parallel information presented in DCD Table 11.5-6.*

GE Response

In Revision 1 of the DCD issued February 5, 2006, Tables 11.5-6 and 11.5-8 have been updated to indicate those streams which are considered to be “processes” and which streams are “effluents”. All gaseous effluents are considered to be “continuous”. With respect to the basis for the listed analytical sensitivities, the values were selected to provide assurance that the detection limit be better than that needed to demonstrate compliance with offsite release limits. GE proposes to remove the values from Tables 11.5-6 and 11.5-8 and indicate that the sensitivities, and the specific analyses to be done, be provided at the COL stage as per the guidance in SRP 11.5. This change will be incorporated into Revision 2 of DCD Section 11.5.

NRC RAI 11.5-17

*This comment is related to the RAI for DCD Table 11.5-2 (see RAI 11.5.3-6 above). This RAI addresses the same concerns in ensuring that operational ranges and levels of accuracy of such instrumentation are adequate in confirm compliance with airborne effluent concentration limits of App. B to Part 20. Accordingly, the information presented in DCD Table 11.5-8 should be consistent with any revisions made to DCD Table 11.5-2 for instrumentation used to monitor continuous gaseous effluent releases*

GE Response

In Revision 1 of the DCD issued February 5, 2006, Table 11.5-8 has been made consistent to Table 11.5-2, as appropriate.

NRC RAI 11.5-18

*The PRMS subsystems listed in DCD Sections 11.5.5.2, 11.5.5.3, and 11.5.5.4 are not consistent with those shown in Section 11.5.3 and Table 11.5-3 of the DCD. For example, Section 11.5.5.4 refers to the Containment Overpressure Protection Systems, which is not listed in Section 11.5.3, nor in Table 11.5-3. Also, the text uses different nomenclatures for the same subsystems. Update text accordingly. Note: These comments also apply to Tables 11.5-1 to 11.5-8.*

GE Response

In Revision 1 of the DCD issued February 5, 2006, the PRMS subsystems listed Sections 11.5.5.2, 11.5.5.3 and 11.5.5.4 have been made consistent with Section 11.5.3 and Tables 11.5-1 through 11.5-8. The nomenclature used throughout the chapter has been made consistent.

NRC RAI 11.5-19

*The PRMS subsystems listed in Section 11.5.6.1 are not consistent with those shown in Section 11.5.3 and Table 11.5-3. For example, the section refers to the Containment Overpressure Protection Systems, which is not listed in Section 11.5.3, nor in Table 11.5-3. Also, the text uses different nomenclatures for the same subsystems. Update text accordingly. Note: These comments also apply to Tables 11.5-1 to 11.5-8.*

GE Response

The PRMS subsystems and their nomenclature have been made consistent in Revision 1 of the DCD issued February 5, 2006. Specifically, for Section 11.5.6.1, the subsystems have been updated to agree with those listed in Tables 11.5-1 through 11.5-8 as needed.

NRC RAI 11.5-20

*The discussions of applicable PRMS calibration and quality assurance criteria in DCD Section 11.5.6.2 are not fully consistent with SRP Section 11.5.II. The discussions fail to refer to calibration and quality assurance criteria of Regulatory Guides 1.21 and 4.15. Update text accordingly and assess whether DCD Section 11.5.2 needs to be updated as well.*

GE Response

Section 11.5.2 has been updated to include references to RGs 1.21 and 4.15 in Revision 1 of the DCD issued February 5, 2006, and now addresses the SRP guidance on calibration and quality assurance.

NRC RAI 11.5-21

*Although numerous references are cited in the text, their full citations are missing in DCD Section 11.5.8. Among others, references are missing for ANSI N42.18-1980, ANSI/HPS N13.1-1999, NUREG-0737, General Design Criteria 60 and 64, and Regulatory Guides 1.21, 1.97, and 4.15. Update list of references accordingly*

GE Response

In Revision 1 of the DCD issued February 5, 2006, Section 11.5.8 has been updated to indicate all of the relevant references used in the design so that compliance to SRP 11.5 is now demonstrated.

NRC RAI 7.5-1

*This section refers to Chapter 11.5 and Fig. 7.5-2 for descriptions and information on the designations and ID codes of radiation monitoring systems. The numbering designations shown in Fig. 7.5-2 are inconsistent for ID No. 21, 22, and 23. The system identified as No. 21 on Fig. 7.5-2 is not listed in Table 11.5-3 and its designation (“#21, COPS”) and functions are not described in Chapter 11.5.3. As a result, ID codes No. 21 and 22 presented in Fig. 7.5-2 are not consistent with those shown in Table 11.5-3. Also, instrument ID code No. 23 is included in Fig. 7.5-2 but is not listed in Table 11.5-3. Provide an updated listing and designations of instrumentation systems that are consistent with Chapter 11.5 of the DCD.*

GE Response

In Revision 2 of DCD Section 7.5, Figure 7.5-2 will be eliminated and in its place, a cross reference to Section 11.5 will be made. In Revision 1 of the DCD issued February 5, 2006, Figure 11.5-1 and Table 11.5-3 have been updated to be consistent with the PRMS subsystems discussed in Chapter 11.5.

NRC RAI 7.5-2

*This section refers to Table 11.5 and Fig. 7.5-2 for descriptions and information of the radiation monitoring systems. A review of instrumentation systems listed on page 7.5-14 and those shown in Fig. 7.5-2 indicates that the listing of instrument systems shown on this page is incomplete with that presented in Chapter 11.5.3 and Table 11.5-3. For example, the systems listed on page 7.5-14 is a partial listing (7 of 22 systems). Update the listing of instrumentation systems on page 7.5-14 and ensure consistency with those listed in Chapter 11.5 of the DCD.*

GE Response

In Revision 2 of the DCD, the reference will be changed from "7.5-2" to "11.5-1". Since the sentence, that notes the various subsystems that comprise the PRM system, currently states: "The following process and effluent paths and/or areas represent some of the major areas monitored for excessive radiation levels (partial list):", GE believes that this reference revision is sufficient since the reader is directed to Chapter 11.5 for a comprehensive list of the various radiation monitoring subsystems.

### ***11.5.6.3 Maintenance***

Control and routine maintenance and cleaning operations of the sampling systems is conducted from either the front or the top of the skid or panel. Lifting eyes or other devices are provided for hoisting the units, to facilitate replacement if it is ever required.

Instrument modules are design to facilitate calibration checks and troubleshooting. Accessibility for power supply adjustments is provided.

Sampling racks and electronic modules are serviced and maintained on an annual basis or in accordance with the operational instructions to ensure reliable operation. Such maintenance includes servicing and replacement of defective components and adjustments, as required, after performing a test or calibration check. If any work is performed that would affect the calibration of the instrument, a re-calibration is performed following the maintenance operation.

## **11.5.7 COL Information**

### ***11.5.7.1 RMS Lower Limit of Detection***

The derivation of each Subsystem's Lower Limit of Detection is to be determined by the COL applicant based on site specific conditions and operating characteristics of each installed effluent radiation monitoring subsystem.

### ***11.5.7.2 Offsite Dose Calculation Manual***

The COL applicant will also develop an offsite dose calculation manual (ODCM) that contains the methodology and parameters used for calculation of offsite doses resulting from gaseous and liquid effluents. The applicant will address operational setpoints for the radiation monitors and address programs for monitoring and controlling the release of radioactive material to the environment, which eliminates the potential for unmonitored and uncontrolled release. The ODCM will include planned discharge flow rates.

### ***11.5.7.3 Process and Effluent Monitoring Program***

In addition, the COL applicant is responsible for the site-specific program aspects of the process and effluent monitoring and sampling per ANSI N13.1 and Regulatory Guides 1.21 and 4.15.

### ***11.5.7.4 Site Specific Offsite Dose Calculation***

The COL applicant is responsible for addressing 10 CFR 50, Appendix I guidelines for maximally exposed offsite individual doses and population doses via liquid and gaseous effluents.

### ***11.5.7.5 Sensitivities and Analysis***

The COL applicant is responsible for providing the instrument sensitivities and specific analyses to be used for demonstrating compliance with RG 1.21.

**Table 11.5-6  
Radiological Analysis Summary of Gaseous Process Samples**

Sample Description	Sample Frequency	Analysis	Sensitivity (MBq/m <sup>3</sup> )	Purpose
1. Containment Atmosphere (drywell)	Periodically and prior to entry	Gross α-β	*	Determine need for respiratory equipment
		Tritium	*	
2. Offgas Pre-treatment Sample	Monthly	Gamma spectrum	*	Determine Offgas activity
3. Offgas Post-treatment Sample	Weekly	Gross β	*	Determine Offgas System cleanup efficiency
		I-131	*	
		Gamma spectrum	*	
		Tritium	*	
4. Main Turbine Gland Seal Steam Condenser Exhaust 2	Weekly	Gross β	*	Determine effectiveness of gland sealing
		I-131	*	
		Gamma spectrum	*	
		Tritium	*	

\* Sensitivities and specific analyses will be provided by COL applicant in compliance with RG 1.21.

**Table 11.5-8  
Radiological Analysis Summary of Gaseous Effluent Samples**

Sample Description	Sample Frequency*	Analysis	Sensitivity (MBq/m <sup>3</sup> )	Purpose
1. Turbine Building Combined Ventilation Exhaust	Weekly	Gross β	**	Effluent record
		I-131	**	
		Ba/La-140	**	
	Monthly	Gamma spectrum	**	
		I-133 and I-135	**	
		Tritium	**	
		Gross alpha	**	
Quarterly	Sr-89 and Sr-90	**		
2. Plant Stack	As above	As above	As above	Effluent record
3. Radwaste Building Ventilation Exhaust	As above	As above	As above	Effluent record
4. Fuel Building Combined Ventilation Exhaust	As above	As above	As above	Effluent record

\* All frequencies of sampling will be in accordance with RG 1.21.

\*\* Sensitivities and specific analyses will be provided by COL applicant in compliance with RG 1.21.

and effluent paths and/or areas represent some of the major areas monitored for excessive radiation levels (partial list):

- Main Steamline radiation;
- Reactor Building HVAC Exhaust;
- Isolation condenser pool vent discharge
- Control Room air intake;
- Drywell sump LCW and HCW discharge;
- Fuel Storage Building Main Area HVAC;
- Refueling Handling Area Air;
- Turbine Building Ventilation HVAC Exhaust;
- Turbine Compartment Area Exhaust;
- Offgas Pre Treatment;
- Offgas Post Treatment;
- Radwaste Building Ventilation Exhaust.

The system design is configured as shown in Figure 11.5-1. Design description of the PRMS together with detector and channel requirements are included in Section 11.5.

#### ***7.5.3.1 Safety Evaluation***

The PRMS design, including the sensors and the instrumentation channels, are engineered into both safety-related and nonsafety-related subsystems and are environmentally and seismically qualified for continuous monitoring during reactor operation, and abnormal and accident plant conditions. The system design conforms to the System Design Bases and with the relevant codes and standards that are specified for this system in Table 7.1-1.

#### ***10 CFR 50.55 and 52***

- 50.55a(a)(1), Quality Standards for Systems Important to Safety  
Conformance: Process Radiation Monitoring System complies with this requirement.
- 50.55a(h), Criteria for Protection Systems for Nuclear Power Generating Stations (ANSI/IEEE Standard 279)  
Conformance: Separation and isolation is preserved both mechanically and electrically in accordance with IEEE 603 (this replaces IEEE 279) and RG 1.75. The Process Radiation Monitoring System safety-related subsystems are divisionalized and are redundantly designed so that failure of any instrument will not interfere with the system operation. Electrical separation is maintained between the redundant divisions.
- 50.34(f)(2)(v)(I.D.3), Bypass and Inoperable Status Indication  
Conformance: Process Radiation Monitoring System demonstrates compliance by being able to provide automatic indication of bypassed and inoperable status.

**Figure Deleted See Figure 11.5-1**

**Figure 7.5-2. Process Radiation Monitoring System Design**