U.S. NUCLEAR REGULATORY COMMISSION

DESIGN-SPECIFIC REVIEW STANDARD FOR mPOWER^{TM} iPWR DESIGN

2.4.14 TECHNICAL SPECIFICATIONS AND EMERGENCY OPERATION REQUIREMENTS

REVIEW RESPONSIBILITIES

Primary - Organization responsible for the review of issues related to hydrology

Secondary - None

I. AREAS OF REVIEW

In this section of the Design-Specific Review Standard (DSRS), identification of the design bases for technical specifications and emergency procedures are carried out that are required to implement protection against floods for structures, systems, and components (SSCs) important to safety and to ensure that an adequate supply of water for shutdown and cooldown purposes is available.

This section is part of Chapter 2 of the DSRS, which discusses the site characteristics that could affect the safe design and siting of a plant. The U.S. Nuclear Regulatory Commission (NRC) staff reviews information presented by the applicant for a design certification (DC), early site permit (ESP), or combined license (COL) concerning hydrologic setting of the site as they relate to SSCs Important to safety. This DSRS section applies to reviews performed for each of these types of applications. These reviews are based on information and analysis presented in the applicant's final safety analysis report (FSAR). The staff's review and findings are described in the appropriate section of the final safety evaluation report (FSER).

The specific areas of review are as follows:

1. Bases for Emergency Actions: The staff reviews controlling hydrologic events (which may be different design-basis events for the various site characteristics), as determined in previous hydrology sections of the FSAR, to identify bases for emergency actions required during these events.

2. Available Response Time: The staff reviews the amount of warning time available to initiate and complete emergency procedures before onset of conditions during the controlling hydrologic events that may prevent such action.

3. Technical Specifications: Technical specifications related to all emergency procedures required to ensure adequate plant safety from controlling hydrologic events are reviewed by the organization responsible for the review of issues related to technical specifications.

4. Consideration of Other Site-Related Evaluation Criteria: The staff reviews the potential effects of seismic (including effects of potential land subsidence) and non-seismic

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information on the postulated technical specifications and emergency operations (including the effects of saturated soils) for the proposed plant site. For sites located in the permafrost region the review includes information on freezing, thawing, subsurface thermal gradients and impacts of gas hydrates and their impacts on implementation of emergency operations.

5. Additional Information for Title 10 of the *Code of Federal Regulations* (CFR) Part 52 Applications: Additional information will be presented dependent on the type of application. For a COL application, the additional information is dependent on whether the application references an ESP, a DC, both, or neither. Information requirements are prescribed within the "Contents of Application" section of the applicable Subparts to 10 CFR Part 52.

Review Interfaces

Other DSRS or Standard Review Plan (SRP) sections interface with this section as follows:

1. Sections 2.4.0 and2.4.2 - 2.4.9 address specific flood-producing phenomena and design-basis flood levels. Section 2.4.12 address effects of groundwater.

2. The identification of structures and equipment important to safety that must be protected against the effects of flooding is performed under DSRS Section 3.4.1, "Internal Flood Protection for Onsite Equipment Failure."

3. The review of the design of seismic Category I structures that may affect plant flooding protection requirements is performed under DSRS Section 3.4.2, "Analysis Procedures."

4. The review to ensure that adverse environmental conditions will not preclude the safety function of the ultimate heat sink is performed under DSRS Section 9.2.5, "Ultimate Heat Sink."

5. The staff's review related to flooding from local probable maximum precipitation is described in DSRS Section 2.4.2; that related to PMF in streams and rivers is described in DSRS Section 2.4.3; that related to dam failure scenarios is described in DSRS Section 2.4.4; that related to effects of storm surges and seiches including probable maximum windstorm is described in DSRS Section 2.4.5; that related to tsunami hazards is described in DSRS Section 2.4.6; that related to ice hazards is described in DSRS Section 2.4.7; that related to channel diversions is described in DSRS Section 2.4.9; that related to low water is described in DSRS Section 2.4.11; and that related to groundwater is described in DSRS Section 2.4.12..

6. For DC applications and COL applications referencing a DC rule or DC application, review of the site parameters in the Design Control Document (DCD) Tier 1 and Chapter 2 of the DCD Tier 2[1] submitted by the applicant is performed under SRP Section 2.0, "Site Characteristics and Site Parameters." Review of site characteristics and site-related design parameters in ESP applications or in COL applications referencing an ESP is also performed under SRP Section 2.0.

[1] Additional supporting information of prior DC rules may be found in DCD Tier 2 Section 14.3.

II. ACCEPTANCE CRITERIA

Requirements

Acceptance criteria are based on meeting the relevant requirements of the following Commission regulations:

1. 10 CFR Part 100, as it relates to identifying and evaluating hydrologic features of the site. The requirements to consider physical site characteristics in site evaluations are specified in 10 CFR 100.20(c).

2. 10 CFR 100.23(d) sets forth the criteria to determine the siting factors for plant design bases with respect to at seismically-induced floods and water waves the site.

3. 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 2 as it relates to consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated.

4. 10 CFR 52.17(a)(1)(vi), for ESP applications, and 10 CFR 52.79(a)(1)(iii), for COL applications, as they relate to identifying hydrologic site characteristics with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding areas and with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated.

5. 10 CFR 50.36, as it relates to identifying limiting conditions on technical specifications for safe operation of the plant.

DSRS Acceptance Criteria

Specific DSRS acceptance criteria acceptable to meet the relevant requirements of the NRC's regulations identified above are set forth below. The DSRS is not a substitute for the NRC's regulations, and compliance with it is not required. Identifying the differences between this DSRS section and the design features, analytical techniques, and procedural measures proposed for the facility, and discussing how the proposed alternative provides an acceptable method of complying with the regulations that underlie the DSRS acceptance criteria, is sufficient to meet the intent of 10 CFR 52.47(a)(9), "Contents of applications; technical information." The same approach may be used to meet the requirements of 10 CFR 52.17(a)(1)(xii) and 10 CFR 52.79(a)(41), for ESP and COL applications, respectively.

Appropriate sections of the following regulatory guides (RG) are used by the staff for the identified acceptance criteria:

- RG 1.29 identifies seismic design bases for SSCs important to safety.

- RG 1.59, as supplemented by current best practices, provides guidance for developing the flood design bases.

- RG 1.102 describes acceptable flood protection to prevent the safety-related facilities from being adversely affected.

1. Bases for Emergency Actions: To meet the requirements of 10 CFR 50.36, GDC 2, 10 CFR 52.17, and 10 CFR Part 100, an assessment of the hydrologic bases for emergency actions is needed. These bases should be consistent with site characteristics identified by the staff during review of other FSAR sections with respect to flood water surface elevations, surface and subsurface static and dynamic forces, coincident wind-induced waves and runup, and water supply limitations caused by droughts and other natural phenomena.

2. Available Response Time: To meet the requirements of 10 CFR 50.36, GDC 2, 10 CFR 52.17, and 10 CFR Part 100, estimates of available response times to initiate and complete emergency procedures are needed. These estimates are derived from the analysis of the controlling hydrologic events and should be consistent with site characteristics identified during the staff's review of other FSAR sections.

3. Technical Specifications: To meet the requirements of 10 CFR 50.36, GDC 2, 10 CFR 52.17, and 10 CFR Part 100, the applicant's proposed technical specifications related to emergency procedures are reviewed. These technical specifications should be appropriate and should be consistent with the site characteristics.

4. Consideration of Other Site-Related Evaluation Criteria: To meet the requirements of 10 CFR 50.36, GDC 2, 10 CFR 52.17, and 10 CFR Part 100, the applicant's assessment of the potential effects of site-related proximity, seismic (including effects of potential land subsidence), and non-seismic information on the postulated technical specifications and emergency operations is needed. This assessment should be sufficient to demonstrate that the applicant's analyses appropriately account for these effects. For sites located in the permafrost region, the review includes information on freezing, thawing, subsurface thermal gradients, and impacts of gas hydrates and their impacts on implementation of emergency operations.

5. 10 CFR 50, Appendix A, GDC 44 as it relates to providing an ultimate heat sink for normal operating and accident conditions.

Technical Rationale

The technical rationale for application of these acceptance criteria to the areas of review addressed by this DSRS section is discussed in the following paragraphs:

1. Compliance with 10 CFR 50.36 requires establishing appropriate limiting conditions for operation (LOCs) based on analyses and evaluations included in the FSAR. LOCs define the lowest functional capability or performance levels of equipment required for safe operation of a facility.

   As applied to DSRS Section 2.4.14, technical specifications and emergency operation requirements need to be established if the design basis flood would have an adverse effect on SSCs important to safety. In this case, the plant would be shut down before floodwaters reach an unsafe level and appropriate emergency procedures would be implemented by the licensee.

Meeting the requirements of 10 CFR 50.36 provides a level of assurance that the nuclear power plant will be shut down and any necessary emergency measures taken before floodwaters reach an unacceptable level or any other water level, such as a critically low water level resulting from loss of water control structures, prolonged drought, tsunami, seiche, or any other cause relevant to the hydrology of the site.

2. Compliance with GDC 2 requires that SSCs important to safety be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their safety functions.

   GDC 2 applies to DSRS Section 2.4.14 because this section deals with actions specified in the technical specifications to shut down the plant and take appropriate emergency measures when the site is susceptible to flooding. This criterion also applies to measures needed to protect equipment important to safety. RG 1.59 discusses the design basis floods that nuclear power plants should be able to withstand without loss of capability to achieve and maintain cold shutdown. RG 1.102 describes types of flood protection acceptable to the NRC staff and acceptable methods for protecting plants from the effects of probable maximum precipitation falling directly on the site.

   For applications pursuant to 10 CFR Part 52, meeting the applicable requirements of 10 CFR 52.17 and 10 CFR 52.79 that correspond to GDC 2 provides a level of assurance that the most severe hydrologic site characteristics have been identified; whether GDC 2 is met with respect to the adequacy of the associated design bases will be evaluated pursuant to other DSRS sections.

3. Section 100.20(c) of 10 CFR Part 100 requires that physical characteristics of a site (including seismology, meteorology, geology, and hydrology) be taken into account to determine its acceptability for a nuclear power reactor. Section 100.23 addresses the need to consider an adequate cooling water supply for emergency and shutdown decay heat removal in the design of a nuclear power plant. The evaluation shall include consideration of river blockage or diversion, tsunami runup or drawdown, and failure of dams and intake structures, as appropriate.

   Meeting the requirements of 10 CFR Part 100 provides assurance that technical specifications and emergency operations are consistent with severe phenomena and are adequate to ensure safe operation of SSCs important to safety during adverse environmental conditions.

III. REVIEW PROCEDURES

The procedures outlined below are used to review ESP applications and COL applications that do not reference an ESP to determine whether data and analyses for the proposed site meet the acceptance criteria given in Subsection II of this DSRS section. As applicable, reviews of COLs include a determination on whether the content of technical specifications related to hydrology-related site characteristics are acceptable and whether the technical specifications reflect consideration of any identified unique conditions.

These review procedures are based on the identified DSRS acceptance criteria. For deviations from these acceptance criteria, the staff should review the applicant's evaluation of how the proposed alternatives provide an acceptable method of complying with the relevant NRC requirements identified in Subsection II.

1. In accordance with 10 CFR 52.47(a)(8),(21), and (22), for new reactor license applications submitted under Part 52, the applicant is required to (1) address the proposed technical resolution of unresolved safety issues (USIs) and medium- and high-priority generic safety issues (GSIs) that are identified in the version of NUREG-0933 current on the date 6 months before application and that are technically relevant to the design; (2) demonstrate how the operating experience insights have been incorporated into the plant design; and, (3) provide information necessary to demonstrate compliance with any technically relevant portions of the Three Mile Island requirements set forth in 10 CFR 50.34(f), except paragraphs (f)(1)(xii), (f)(2)(ix), and (f)(3)(v). These cross-cutting review areas should be addressed by the reviewer for each technical subsection and relevant conclusions documented in the corresponding FSER section.

2. Bases for Emergency Actions: The staff reviews controlling hydrologic events, including floods, high subsurface hydraulic heads, and low-water events, that may require emergency actions to ensure safe operation of the plant. The staff reviews flood-causing mechanisms in FSAR Sections 2.4.2 through 2.4.7 and in Section 2.4.9. The controlling hydrologic event with its effects (e.g., flood water surface elevation, surface or subsurface static and dynamic forces, erosion, sedimentation) should be identified as well as the emergency actions are to be initiated.

   The staff also reviews low-water events that may require emergency actions. Low-water events resulting from loss of storage due to dam-failures are reviewed in FSAR Section 2.4.4; those due to surges and seiches are reviewed in FSAR Section 2.4.5; those due to tsunamis are reviewed in FSAR Section 2.4.6; those due to ice are reviewed in FSAR Section 2.4.7; those due to channel diversions are reviewed in FSAR Section 2.4.9; and those due to droughts are reviewed in FSAR Section 2.4.11. The staff reviews these low-water events to identify the controlling low-water event and any emergency action that may be needed for safe operation of the plant during this event.

   As described by RG 1.59, SSCs important to safety may be ”hardened,” that is, SSCs may have protection built into their structural design bases which provides a passive, ”always-in-place“ protection measure. RG 1.59 also allows for SSCs not to have hardened protection if certain criteria regarding alternative protection are met. The staff should ask the organization responsible for review of the SSCs to review hardened protection provided for SSCs important to safety. Alternative protection measures that are non-permanent measures (i.e., are not always in place) should be reviewed to ensure that these measures can be implemented.

3. Available Response Time: The staff analyzes the controlling hydrologic events for which emergency action (e.g., sandbagging, shutdown, installation of flood gates and stop logs, dewatering system, etc.) is needed for the plant to determine the time available for initiation and completion of these emergency actions. The controlling hydrologic events, including flooding, high subsurface hydraulic heads, and low-water events, are analyzed to determine the warning time available for emergency actions before onset of conditions that may preclude these actions.

   The environmental conditions likely to prevail during all potential flooding, high subsurface hydraulic heads, and low-water events, up to and including events of the severity of the controlling event, are reviewed to establish the minimum time available for implementation of emergency procedures. The physical parameters, such as the rate of

rise or fall (of river or lake water levels), as well as evaluation (based on experience and engineering judgment) of flood or tsunami warning networks or drought forecasts, provide the staff with an independent estimate of available warning time. This data is provided to organizations responsible for the review of issues related to plant emergency procedures for their independent evaluation of the time required to implement shutdown and emergency protection measures. The environmental conditions likely during the controlling hydrologic event should be such that the procedures can be carried out.

It should be shown that all SSCs important to safety exposed to the effects of the controlling hydrologic events either have adequately designed hardened protection or that a set of adequate emergency actions and measures is available which can be implemented and completed within the available response time to ensure safety of these SSCs.

4. Technical Specifications: An appropriate item in the plant technical specifications (TS) should be required in cases where emergency procedures are needed to ensure adequate protection. For those plants for which shutdown (if specified under RG1.59 Position 2) and installation of protective measures are necessary in the event of a major flood, the procedures for carrying out these measures are reviewed by the organization responsible for the review of issues related to technical specifications for compatibility of available and required times, as established above. The TS should reference an emergency plan which allows for the orderly installation of required protection measures.

5. Consideration of Other Site-Related Evaluation Criteria: Subpart B of 10 CFR Part 100 describes site-related proximity, seismic (including effects of potential land subsidence), and non-seismic evaluation criteria for power reactor applications. The staff's review should include evaluation of pertinent information to determine if these criteria are appropriately used in postulation of technical specifications and emergency operations at the proposed plant site. The criteria should include the effect of saturated soils on emergency operations. For sites located in the permafrost region the review includes information on freezing, thawing, subsurface thermal gradients and impacts of gas hydrates and their impacts on implementation of emergency operations.

6. Review Procedures Specific to 10 CFR Part 52 Application Type

   A. ESP Reviews: Subpart A to 10 CFR Part 52 specifies the requirements and procedures applicable to the Commission's review of an ESP application for approval of a proposed site. Information required in an ESP application includes a description of the site characteristics and design parameters of the proposed site. The scope and level of detail of review of data parallels that used for a COL review.

      In the absence of certain circumstances, such as a compliance or adequate protection issue, 10 CFR 52.39 precludes the staff from imposing new site characteristics, design parameters, or terms and conditions on the ESP at the COL stage. Accordingly, the reviewer should ensure that all physical attributes of the site that could affect the design basis of SSCs important to safety are reflected in the site characteristics, design parameters, or terms and conditions on the ESP.

B. Standard DC Reviews: DC applications do not contain general descriptions of site characteristics because this information is site-specific and will be addressed by the COL applicant. However, pursuant to 10 CFR 52.47(a)(1), a DC applicant must provide site parameters postulated for the design. Site parameters associated with this DSRS section are reviewed, as applicable, to verify that:

i. The postulated site parameters are representative of a reasonable number of sites that have been or may be considered for a COL application;

ii. The appropriate site parameters are included as Tier 1 information. This convention has been used by previous DC applicants. Additional guidance on site parameters is provided in SRP Section 2.0;

iii. Pertinent parameters are stated in a site parameters summary table; and

iv. The applicant has provided a basis for each of the site parameters.

C. COL Reviews: For a COL application referencing a certified standard design, NRC staff reviews that application to ensure that sufficient information is presented to demonstrate that the characteristics of the site fall within the site parameters specified in the DC rule. If there are site parameters associated with this DSRS section and if the above condition for these parameters has not been met (i.e. the actual site characteristics do not fall within the certified standard design site parameters), the COL applicant should need to demonstrate by some other means that the proposed facility is acceptable at the proposed site. This might be done by re-analyzing or redesigning the proposed facility.

For a COL application referencing an ESP, NRC staff reviews the application to ensure the applicant provides sufficient information to demonstrate that the design of the facility falls within the site characteristics and design parameters specified in the ESP as applicable to this DSRS section. In accordance with 10 CFR 52.79(b)(2), should the design of the facility not fall within the site characteristics and design parameters, the application shall include a request for a variance from the ESP that complies with the requirements of 10 CFR 52.39 and 10 CFR 52.93.

In addition, long-term environmental changes and changes to the region resulting from human or natural causes may have introduced changes to the site characteristics that could be relevant to the design basis. In the absence of certain circumstances, such as a compliance or adequate protection issue, 10 CFR 52.39 precludes the staff from imposing new site characteristics, design parameters, or terms and conditions on the ESP at the COL stage. Consequently, a COL application referencing an ESP need not include a re-investigation of the site characteristics that have previously been accepted in the referenced ESP. However, in accordance with 10 CFR 52.6, "Completeness and Accuracy of Information," the applicant or licensee is responsible for identifying changes of which it is aware, that would satisfy the criteria specified in 10 CFR 52.39. Information provided by the applicant in accordance with 10 CFR 52.6(b) will be addressed by the staff during the review of a COL application referencing an ESP or a DC.

For a COL application referencing either an ESP or DC or both, the staff should review the corresponding sections of the ESP and DC Final FSER to ensure that any ESP conditions, restrictions to the DC, or COL action items identified in the FSERs are appropriately handled in the COL application.

For a COL application referencing either an ESP or DC or both, the staff has issued additional guidance for review of COL items that cannot be resolved prior to issuance of the license in Interim Staff Guidance 015 (ISG-015). A COL applicant must provide all information in the COL application that is necessary for the staff to make the findings required to issue the license. Therefore, it may be necessary for the staff to partially close certain COL action or information items noted in an ESP or a DC, or both. The staff should identify the remaining portion of the COL items associated with information that is not necessary to issue the license as post-licensing commitments.

IV. EVALUATION FINDINGS

The review should document the staff's evaluation of site characteristics against the relevant regulatory criteria. The evaluation should support the staff's conclusions as to whether the regulations are met. The reviewer should state what was done to evaluate the applicant's FSAR. The staff's evaluation may include verification that the applicant followed applicable regulatory guidance, performance of independent calculations, and/or validation of appropriate assumptions. The reviewer may state that certain information provided by the applicant was not considered essential to the staff's review and was not reviewed by the staff. While the reviewer may summarize or quote the information offered by the applicant in support of its application, the reviewer should clearly articulate the bases for the staff's conclusions.

The reviewer verifies that the applicant has provided sufficient information and that the review and calculations (if applicable) support conclusions of the following type to be included in the staff's FSER. The reviewer also states the bases for those conclusions.

1. COL Reviews

The following statements in the FSER should be preceded by a summary of the site characteristics and parameters used for the plant:

As set forth above, the applicant has presented and substantiated information relative to the technical specifications and emergency operations important to the design and siting of this plant. The staff has reviewed the available information provided and for the reasons given above, concludes that the identification and consideration of the technical specifications and emergency operations is acceptable and meets the requirements of 10 CFR 50.36, 10 CFR Part 50, Appendix A, GDC 2, and 10 CFR 100.20(c), with respect to determining the acceptability of the site.

The staff finds that the applicant has considered the appropriate site phenomena in establishing the technical specifications and emergency operations for SSCs important to safety. The staff has generally accepted the methodologies used to determine the technical specifications and emergency operations, as documented in safety evaluation reports for previous licensing actions. Accordingly, the staff concludes that the use of these methodologies results in design bases containing margin sufficient for the limited

accuracy, quantity, and period of time in which the data have been accumulated. The staff concludes that the identified design bases meet the requirement(s) of 10 CFR 50.36, 10 CFR Part 50, Appendix A, GDC 2, and 10 CFR 100.20(c), with respect to establishing the design basis for SSCs important to safety.

2. ESP Reviews

The following statements in the FSER should be preceded by a summary of the site characteristics and design parameters to be included in any ESP that might be issued for the proposed site:

As set forth above, the applicant has presented and substantiated sufficient information pertaining to the technical specifications and emergency operations at the proposed site. Section 2.4.14, "Technical Specifications and Emergency Operation Requirements," of the Design-Specific Review Standard for mPower™ iPWR Design, provides that the site FSAR should address the requirements of 10 CFR 50.36, and Parts 52 and 100 as they relate to identifying and evaluating flood protection measures at the site. Further, the applicant considered the most severe natural phenomena that have been historically reported for the site and surrounding area while describing the hydrologic interface of the plant with the site, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated. The staff has generally accepted the methodologies used to determine the severity of the phenomena reflected in these site characteristics, as documented in FSERs for previous licensing actions. Accordingly, the staff concludes that the use of these methodologies results in site characteristics containing sufficient margin for the limited accuracy, quantity, and period of time in which the data have been accumulated. In view of the above, the site characteristics previously identified are acceptable for use in establishing the design bases for SSCs important to safety, as may be proposed in a COL application.

Therefore, the staff concludes that the identification and consideration of the site characteristics related to technical specifications and emergency operation requirements set forth above are acceptable and meet the requirements of 10 CFR 52.17(a)(1)(vi), 10 CFR 100.20(c), and 10 CFR 100.21(d).

In view of the above, the staff finds the applicant's proposed site characteristics related to technical specifications and emergency operation requirements for inclusion in an ESP for the applicant's site, should one be issued, acceptable.

3. DC Reviews

The following statement in the FSER should be preceded by a list of the applicable site parameters used for the plant:

The NRC staff acknowledges that the applicant has selected the site parameters referenced above for plant design inputs (a subset of which is included as Tier 1 information) and agrees that they are representative of a reasonable number of sites that have been or may be considered for a COL application. Technical specifications and emergency operations are site-specific and will be addressed by the COL applicant. This should include the provision of information sufficient to demonstrate that the design of the plant falls within the site parameters specified by the siting review.

V. IMPLEMENTATION

The staff will use this DSRS section in performing safety evaluations of mPower^{TM}-specific DC, COL, or ESP applications submitted by applicants pursuant to 10 CFR Part 52. The staff will use the method described herein to evaluate conformance with Commission regulations.

Because of the numerous design differences between the mPower^{TM} and large light-water nuclear reactor power plants, and in accordance with the direction given by the Commission in SRM- COMGBJ-10-0004/COMGEA-10-0001, "Use of Risk Insights to Enhance the Safety Focus of Small Modular Reactor Reviews," dated August 31, 2010 (Agencywide Documents Access and Management System Accession (ADAMS) No. ML102510405), to develop risk-informed licensing review plans for each of the small modular reactor (SMR) reviews including the associated pre-application activities, the staff has developed the content of this DSRS section as an alternative method for mPower^{TM}-specific DC, COL, or ESP applications submitted pursuant to 10 CFR Part 52 to comply with 10 CFR 52.47(a)(9), "Contents of applications; technical information."

This regulation states, in part, that the application must contain "an evaluation of the standard plant design against the SRP revision in effect six months before the docket date of the application." The content of this DSRS section has been accepted as an alternative method for complying with 10 CFR 52.47(a)(9) as long as the mPower^{TM} DCD FSAR does not deviate significantly from the design assumptions made by the NRC staff while preparing this DSRS section. The application must identify and describe all differences between the standard plant design and this DSRS section, and discuss how the proposed alternative provides an acceptable method of complying with the regulations that underlie the DSRS acceptance criteria. If the design assumptions in the DC application deviate significantly from the DSRS, the staff will use the SRP as specified in 10 CFR 52.47 (a)(9). Alternatively, the staff may supplement the DSRS section by adding appropriate criteria in order to address new design assumptions. The same approach may be used to meet the requirements of 10 CFR 52.17 (a)(1)(xii) and 10 CFR 52.79 (a)(41), for ESP and COL applications, respectively.

VI. REFERENCES

1. 10 CFR 50.36, "Technical Specifications."

2. 10 CFR Part 50, Appendix A, General Design Criterion 2, "Design Bases for Protection Against Natural Phenomena."

3. 10 CFR Part 100, "Reactor Site Criteria."

4. Final Interim Staff Guidance ESP/DC/COL-ISG-015, "Post-Combined License Commitments." January 21, 2010. Accession Number: ML093561416.

5. RG 1.29, "Seismic Design Classification."

6. RG 1.59, "Flood Design Basis for Nuclear Power Plants."

7. RG 1.102, "Flood Protection for Nuclear Power Plants."

8. ANSI/ANS-2.8-1992, "Determining Design Basis Flooding at Power Reactor Sites." Historical Technical Reference.