U.S. NUCLEAR REGULATORY COMMISSION

DESIGN-SPECIFIC REVIEW STANDARD FOR mPOWER™ iPWR DESIGN

3.5.1.6 AIRCRAFT HAZARDS

REVIEW RESPONSIBILITIES

Primary - Organization responsible for the review of man-made site hazards.

Secondary - None

I. AREAS OF REVIEW

The purpose of the review is to assure that the risks from aircraft hazards are sufficiently low. Probabilistic considerations may be used to demonstrate that aircraft hazards need not be a design-basis concern. Otherwise, design-basis aircraft identification is made and the applicant's plant design is evaluated to assure that it is protected against the potential effects of aircraft impacts and fires. This Design-Specific Review Standard (DSRS) section applies to the review of an early site permit (ESP), design certification (DC), or combined license (COL) application submitted pursuant to Title 10 of the *Code of Federal Regulations* (CFR), Part 52.

All structures, systems, and components (SSCs) important to safety are to be protected from aircraft hazards to ensure compliance with 10 CFR 50, Appendix A, General Design Criterion (GDC) 3 and 4 requirements.

The specific areas of review are as follows:

1. The staff reviews the applicant's assessment of aircraft hazards to the plant to determine whether or not they should be incorporated into the plant design basis.

   Considerations include:

   A. Airports

   B. Federal airways

   C. Holding and approach patterns

   D. Military airports, training routes, and training areas

2. If the aircraft hazards are incorporated into the plant design basis, the staff identifies and describes the design-basis aircraft in terms of aircraft weight, speed, and other appropriate characteristics.

3. Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC). For DC and COL reviews, the staff reviews the applicant's proposed ITAAC associated with the SSCs

ADAMS Accession No. ML12318A198

related to this DSRS section in accordance with Standard Review Plan (SRP) Section 14.3, "Inspections, Tests, Analyses, and Acceptance Criteria." The staff recognizes that the review of ITAAC cannot be completed until after the rest of this portion of the application has been reviewed against acceptance criteria contained in this DSRS section. Furthermore, the staff reviews the ITAAC to ensure that all SSCs in this area of review are identified and addressed as appropriate in accordance with SRP Section 14.3.

4. Additional Information for 10 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" sections of the applicable Subparts to 10 CFR Part 52.

Review Interfaces

Other DSRS or SRP sections interface with this section as follows:

1. Missile effects on plant structures from aircraft impacts (DSRS Section 3.5.3).

2. Fire effects from aircraft fires (SRP Section 9.5.1).

3. Requirements to protect plant SSCs important to safety from aircraft crashes (DSRS Section 3.5.2).

4. 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/Site Parameters.

5. Review of the description and results of the Probabilistic Risk Assessment is performed under SRP Section 19.0.

II. ACCEPTANCE CRITERIA

Requirements

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

1. 10 CFR Part 100, 10 CFR 100.20, 10 CFR 100.21, 10 CFR 52.17 and 10 CFR 52.79, as they relate to the factors to be considered in the evaluation of sites. These regulations require that reactors reflect through their design, construction, and operation an extremely low probability for accidents that could result in the release of significant quantities of radioactive fission products. In addition, 10 CFR Part 100 and 10 CFR 100.20 require that the site location, in conjunction with other considerations, ensure a low risk of public exposure.

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

2. 10 CFR 50, Appendix A, GDC 3 requires that SSCs important to safety be appropriately protected against the effects of fires.

3. GDC 4 requires that SSCs important to safety be appropriately protected against the effects of missiles that may result from events and conditions outside the nuclear power unit.

4. For ESP applications (as they relate to the factors to be considered in the evaluation of sites), the acceptance criteria are based on meeting the relevant requirements of 10 CFR 52.17, 10 CFR 100.20, and 10 CFR 100.21. These requirements stipulate that the individual and societal risk of potential plant accidents must be low.

5. 10 CFR 52.47(b)(1), which requires that a DC application contain the proposed ITAAC that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, a facility that incorporates the design certification has been constructed and will be operated in conformity with the design certification, the provisions of the Atomic Energy Act (AEA), and the U.S. Nuclear Regulatory Commission's (NRC's) rules and regulations.

6. 10 CFR 52.80(a), which requires that a COL application contain the proposed inspections, tests, and analyses, including those applicable to emergency planning, that the licensee shall perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will operate in conformity with the combined license, the provisions of the AEA, and the NRC's regulations.

DSRS Acceptance Criteria

Specific DSRS acceptance criteria acceptable to meet the relevant requirements of the NRC's regulations identified above are as follows for review described in this DSRS section. 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."

1. 10 CFR 100.20, 10 CFR 100.21, 10 CFR 52.17, 10 CFR 52.47, and 10 CFR 52.79, requirements are met if the probability of aircraft accidents resulting in radiological consequences greater than the 10 CFR Part 100 exposure guidelines is less than an order of magnitude of 10^{-7} per year (see SRP Section 2.2.3). The probability is considered to be less than an order of magnitude of 10^{-7} per year by inspection if the distances from the plant meet all of the criteria listed below:

   A. The plant-to-airport distance D is between 5 and 10 statute miles, and the projected annual number of operations is less than $500\ D^2$, or the plant-to-airport distance D is greater than 10 statute miles, and the projected annual number of operations is less than $1000\ D^2$

B. The plant is at least 5 statute miles from the nearest edge of military training routes, including low-level training routes, except for those associated with usage greater than 1000 flights per year, or where activities (such as practice bombing) may create an unusual stress situation

C. The plant is at least 2 statute miles beyond the nearest edge of a Federal airway, holding pattern, or approach pattern

The projected number of operations in item A above, as well as the 1000 flights per year in item B above, should represent the maximum aircraft activity expected during the permit term in ESP applications or for the license duration in COL applications.

2. If the above proximity criteria are not met, or if sufficiently hazardous military activities are identified (see item B above), a detailed review of aircraft hazards must be performed. Aircraft accidents that could lead to radiological consequences in excess of the exposure guidelines of 10 CFR Part 100 with a probability of occurrence greater than an order of magnitude of 10^{-7} per year should be considered in the design of the plant. If the results of the review do not support a finding that the risk from aircraft activities is acceptably low, then the design-basis acceptance criteria outlined in GDC 4 applies. The plant meets the relevant requirements of GDC 3 and GDC 4, and is considered appropriately protected against design-basis aircraft impacts and fires, if the SSCs important to safety are capable of withstanding the effects of the postulated aircraft impacts and fires without loss of safe-shutdown capability and without causing a release of radioactivity that could exceed the 10 CFR Part 100 dose guidelines.

Regulatory Guide (RG) 1.117 provides acceptable methods for determining those SSCs that should be protected. The selection of SSCs to be protected is based upon not allowing offsite exposures to exceed an appropriate fraction of the offsite dose guidelines of 10 CFR Part 100. Basing the limits upon an appropriate "fraction" ensures protection for those events that are not as severe as the design-basis event, but have a higher probability of occurrence. Protecting those SSCs important to safety from the effects of externally generated missiles due to aircraft hazards prevents failure of those systems required for safe shutdown and prevents the release of radioactivity with the potential for causing exposures in excess of the 10 CFR Part 100 guidelines.

The expected rate of exposure identified in 10 CFR 50.34(a)(1) dose guideline as it relates to the requirements identified in 10 CFR 100.20(b) should be about an order of magnitude of 10^{-6} per year. If it can be shown with rigorous analysis, using realistic assumptions and reasonable arguments that the estimated probability could be lower, then, in accordance with the SRP Section 2.2.3, it is acceptable.

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. Aircraft crash hazards that have the potential for causing onsite accidents leading to the release of significant quantities of radioactive fission products, and thus pose an undue risk of public exposure, should have a sufficiently low probability of occurrence and be within the requirements of the low probability of occurrence criteria of 10 CFR 100.20.

2. GDC 3 establishes requirements regarding minimizing the probability and effect of fires and explosions on SSCs important to safety. Aircraft hazards include the potential through an aircraft impact for fires and explosions that could affect SSCs important to safety. RG 1.117 describes an acceptable method for determining which SSCs should be protected. Protecting those SSCs that are important to safety from the effects of aircraft hazards ensures the capability to shutdown the reactor and maintains it in a shutdown condition and the capability to prevent the release of radioactivity with the potential for causing exposures in excess of the 10 CFR Part 100 guidelines.

3. GDC 4 establishes requirements regarding the ability of SSCs important to safety to be protected from dynamic effects, including the effects of missiles that may result from events and conditions outside the nuclear plant. Aircraft hazards are events outside of the nuclear plant that could have the potential for missile generation. The initiation of an externally generated missile due to aircraft impacts is a dynamic effect and the effect of those missiles on SSCs important to safety must be evaluated.

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 is acceptable and whether the technical specifications reflect consideration of any identified unique conditions.

These review procedures are based on meeting 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. Aviation Uses. Data describing aviation uses in the airspace near the proposed site, including airports and their approach paths, Federal airways, Federal Aviation Administration (FAA) restricted areas, and military uses is obtained from the information addressed in Section 2.2.1-2.2.2 of the application based on perusal data obtained and applying plant to airport distance criterion as explained in this DSRS acceptance criteria under section II.1. In general, civilian and military maps should be examined to verify that all aviation facilities of interest have been considered. In the process, the reviewer should develop an independent assessment of the aircraft hazards. Communications with agencies responsible for aircraft operations and the evaluation of aircraft operational data may be utilized.

2. Airways. For situations in which Federal airways or aviation corridors pass through the vicinity of the site, the probability per year of an aircraft crashing into the plant (P_{FA}) should be estimated. This probability will depend on a number of facts, such as the altitude and frequency of the flights, the width of the corridor, and the corresponding distribution of past accidents.

One way of calculating P_{FA} is by using the following expression:

$$P_{FA} = C \times N \times A/w$$

where:

C = in-flight crash rate per mile for aircraft using airway

w = width of airway (plus twice the distance from the airway edge to the site when the site is outside the airway) in miles

N = number of flights per year along the airway

A = effective area of plant in square miles

This gives a conservative upper bound on aircraft impact probability if care is taken in using values for the individual factors that are meaningful and conservative. For commercial aircraft a value of $C = 4 \times 10^{-10}$[1] per aircraft mile has been used. This value of C is comparable to the value cited in University of California, Lawrence Radiation Laboratory (UCRL)[2] Table 2.7 and consistent with the information presented in U.S.

Department of Energy (DOE) Document[3]. This information is documented in the staff letter to Advisory Committee on Reactor Safeguards[4]. For heavily traveled corridors (greater than 100 flights per day), a more detailed analysis may be required to obtain a proper value for this factor.

(1) H. E. P. Krug, "Testimony on Aircraft Operations in Response to a Question from the Board" (Docket Nos. 50-275 and 50-323)

(2) UCRL, "Data Development Technical Support Document of the Aircraft Crash Risk Analysis Methodology (ACRAM) Standard," Chris Y. Kimura, et al., UCRL-ID-124837, August 1, 1996

(3) DOE, "Accident Analysis of Aircraft into Hazardous Facilities," DOE-STD-3014-96, October 1996

(4) Agencywide Documents Access and Management System Accession Numbers (ML092660563 and ML092580315)

3. Civilian and Military Airports and Heli-Ports. The probability of an aircraft crashing into the site should be estimated for cases in which one or more of the conditions in item II.1 of the acceptance criteria are not met. The probability per year of an aircraft crashing into the site for these cases (P_A) may be calculated by using the following expression:

$$P_A = \sum_{i=1}^{L} \sum_{j=1}^{M} C_j N_{ij} A_j$$

where:

M = number of different types of aircraft using the airport

L = number of flight trajectories affecting the site

C_j = probability per square mile of a crash per aircraft movement, for the jth aircraft

N_{ij} = number (per year) of movements by the jth aircraft along the ith flight path

A_j = effective plant area (in square miles) for the jth aircraft

The manner of interpreting the individual factors in the above equation may vary on a case-by-case basis because of the specific conditions of each case or because of changes in aircraft accident statistics.

Values for C_j currently being used are taken from the data summarized in the following table:

Distance From End of Runway (miles)	Probability (x10^{8}) of a Fatal Crash per Square Mile per Aircraft Movement			
	U.S. Air Carrier[1]	General Aviation[2]	USN/USMC[1]	USAF[1]
0–1	16.7	84	8.3	5.7
1–2	4.0	15	1.1	2.3
2–3	0.96	6.2	0.33	1.1
3–4	0.68	3.8	0.31	0.42
4–5	0.27	1.2	0.20	0.40
5–6	0	NA[3]	NA	NA
6–7	0	NA	NA	NA
7–8	0	NA	NA	NA
8–9	0.14	NA	NA	NA
9–10	0.12	NA	NA	NA

(1) D.G. Eisenhut, "Reactor Siting in the Vicinity of Air Fields," American Nuclear Society, June 1973.

(2) D.G. Eisenhut, "Testimony on Zion/Wankegan Airport Interaction." (Docket No. 50-295)

(3) NA indicates that data were not available for this distance

4. Designated Airspaces. For designated airspaces involving military or civilian usage, a detailed quantitative modeling of all operations should be verified. The results of the model should be the total probability (C) of an aircraft crash per unit area and time in the vicinity of the proposed site.

The probability per year of a potentially damaging crash at the site from operations at the facility under consideration (P_M) is then given for this case by the following expression:

$$P_M = C \times A$$

where:

C = total probability of an aircraft crash per square mile per year in the vicinity of the site from the airports being considered

A = effective area of one unit of the plant in square miles

Where estimated risks from military aircraft activity are found to be unacceptably high, suitable airspace or airway relocation should be implemented. Past experience has been that military authorities have been responsive to modification of military operations and relocation of training routes in close proximity to nuclear power plant sites.

5. Holding Patterns. Holding patterns are racetrack-shaped courses at specified altitudes, associated with one or more radio-navigational facilities, where aircraft can "circle" while awaiting clearance to execute an approach to a landing at an airport or to continue along an airway. Holding patterns that are sufficiently distant from the plant need not be considered (see Subsection II above). Otherwise, traffic in the holding pattern should be converted into equivalent aircraft passages taking into account the characteristics, including orientation with respect to the plant, of the holding pattern. The information in item III.2 above should be used in this evaluation.

6. The total aircraft hazard probability at the site equals the sum of the individual probabilities obtained in the preceding steps.

7. The effective plant areas used in the calculations should include the following:

   A. A shadow area of the plant elevation upon the horizontal plane based on the assumed crash angle for the different kinds of aircraft and failure modes.

   B. A skid area around the plant as determined by the characteristics of the aircraft under consideration. Artificial berms or any other manmade and natural barriers should be taken into account in calculating this area.

   C. The areas of those safety-related or risk-significant SSCs that are susceptible to impact or fire damage as a result of aircraft crashes.

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

   A. Early Site Permit 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.

      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 early site permit 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 of the early site permit.

   B. Standard Design Certification 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.

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

2. 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;

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

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

C. Combined License Reviews

For a COL application referencing a certified standard design, NRC staff reviews that application to ensure sufficient information was presented to demonstrate that the characteristics of the site fall within the site parameters specified in the DC rule. Should the actual site characteristics not fall within the certified standard design site parameters, the COL applicant will 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 provided sufficient information to demonstrate that the design of the facility falls within the site characteristics and design parameters specified in the early site permit 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 early site permit at the COL stage. Consequently, the staff's review of a COL application referencing an ESP should 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 safety evaluation

report (FSER) to ensure that any early site permit conditions, restrictions to the DC, or COL action items identified in the FSERs are appropriately handled in the COL application.

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 safety analysis report. 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.

Specifically, the reviewer drafts an introductory paragraph for the evaluation findings describing the procedure used in evaluating the aircraft hazards with respect to the safety-related or risk-significant SSCs. The reviewer verifies that the site location is acceptable and meets the requirements of 10 CFR Part 100 or 10 CFR 100.20, as appropriate and is in accordance with 10 CFR 52.17 for an ESP, 10 CFR 52.47 for DC, and 52.79 for a COL.

The basis for the above findings may be strictly in terms of the probabilities associated with potential aircraft crashes on site. If the aircraft crash statistics applicable to the onsite facilities are such that SRP Section 2.2.3 criteria are met without explicit consideration of plant design features, then conclusions of the following type should be included in the staff's FSER:

> The staff concludes that the operation of the _____ plant in the vicinity of _____ does not present an undue risk to the health and safety of the public and meets the relevant requirements of 10 CFR Part 100 and 10 CFR 100.20, as appropriate. This conclusion is based on the staff's independent verification of the applicant's assessment of aircraft hazards at the site that resulted in a probability less than about 10^{-7} per year for an accident having radiological consequences worse than the exposure guidelines of 10 CFR Part 100.
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> In addition, plant sites reviewed in the past which had equivalent aircraft traffic in equal or closer proximity were, after careful examination, found to present no undue risk to the safe operation of those plants. Based upon this experience, in the staff's judgment, no undue risk is present from aircraft hazard at the plant site now under consideration.

In the event that the staff evaluation of the aircraft hazards does not support the above basis (i.e., if SRP Section 2.2.3 criteria are not met), then the basis for acceptance is derived from applying the GDC 3 and GDC 4 criteria. If the protection against aircraft impacts and fires is such that the plant safety-related or risk-significant SSCs meet the GDC 3 and GDC 4 criteria, then 10 CFR Part 100 requirements are considered to be met and a conclusion of the following type may be included in the staff's FSER:

The staff concludes that the operation of the _____ plant in the vicinity of _____ does not present an undue risk to the health and safety of the public from aircraft hazards and meets the relevant requirements of GDC 3 and 4. This conclusion is based on the staff having independently verified the applicant's assessment of aircraft hazards, including aircraft fires and impacts, at the site and that, if the appropriate safety-related or risk-significant SSCs are designed to withstand the aircraft selected as the design-basis aircraft, then the probability of an aircraft strike causing radiological consequences in excess of the exposure guidelines of 10 CFR Part 100 is less than about 10^{-7} per year.

For Design Certification Reviews

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

The applicant has selected the site parameters referenced above for plant design inputs (a subset of which is included as Tier 1 information), but does not claim that they are representative of any particular percentile of possible sites in the United States, and does not assert the acceptability of the basis for the choice of values with respect to siting. The aircraft hazard is 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 values of the actual site characteristics specified in a COL application.

V. IMPLEMENTATION

The staff will use this DSRS section in performing safety evaluations of mPower™-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™ 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 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™-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 6 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™ DCD Final Safety Analysis Report (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 revise the DSRS section 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 Part 100, "Reactor Site Criteria," Subpart B, "Evaluation Factors for Stationary Power Reactor Site Applications on or After January 10, 1997," Section 100.20, "Factors To Be Considered When Evaluating Sites."

2. 10 CFR Part 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants," Subpart A, "Early Site Permits," Section 52.17, "Contents of Applications, Technical Information."

3. 10 CFR Part 100, "Reactor Site Criteria," Subpart B, "Evaluation Factors for Stationary Power Reactor Site Applications on or After January 10, 1997," Section 100.21, "Non-Seismic Siting Criteria."

4. 10 CFR 50.34(a)(1)(ii) "Contents of Application, Technical Information."

5. 10 CFR 52.17, "Contents of Application, Technical Information."

6. 10 CFR 52.47, "Contents of Application, Technical Information."

7. 10 CFR 52.79, "Contents of Application, Technical Information in Final Safety Analysis Report."

8. Regulatory Guide 1.117, "Tornado Design Classification."

9. 10 CFR Part 50, Appendix A, General Design Criteria 4, "Environmental and Dynamic Effects Design Basis."

10. 10 CFR Part 50, Appendix A, General Design Criteria 3, "Fire Protection."