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10 CFR Part 50

Availability and Adequacy of Design Bases Information at Nuclear Power Plants; Policy Statement

AGENCY: Nuclear Regulatory Commission.

ACTION: Policy statement.

SUMMARY: The Nuclear Regulatory Commission is issuing this policy statement on availability and adequacy of design information at nuclear power plants. This policy statement describes the Commission's expectations and future actions with regard to the availability of design information and emphasizes the Commission's view that facilities should not be modified without a clear understanding of the applicable engineering design bases.

EFFECTIVE DATE: August 10, 1992.

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SUPPLEMENTARY INFORMATION: NRC inspection findings have demonstrated that some licensees have not adequately maintained their design bases information as required by NRC regulations. Both the problems identified during the NRC inspections and those identified by licensees have prompted most power reactor licensees to initiate, over the past several years, design bases reconstitution programs. To implement a reconstitution program, licensees seek to identify missing design documentation and to selectively regenerate missing documentation as required.

In 1989, Nuclear Utilities Management and Resources Council, Inc., (NUMARC) began developing their "Design Basis

Program Guidelines," NUMARC 90-12. While developing these guidelines, NUMARC discussed them at several public meetings held with the NRC. The staff has concluded the NUMARC guidelines provide a useful standard framework for implementing design reconstitution programs. The staff also agrees no single approach would enable utilities to best accomplish the reconstitution task. The NUMARC guidance appeared to provide sufficient flexibility for individual utilities to structure their programs to respond most efficiently to their unique needs and circumstances.

The staff sent comments on the guidelines to NUMARC on November 9, 1990. Commission paper SECY-90-365 informed the Commissioners in advance about the staff response to NUMARC.

The staff requested NUMARC consider making the design bases effort a NUMARC initiative. NUMARC concluded they would not pursue a formal initiative, but would forward the guidelines to their members to use on a voluntary basis. Their reason for not pursuing an initiative was that most of their members were already conducting or evaluating the need to conduct design bases reconstitution programs.

The Commission's evaluation of the status of reconstitution programs clearly indicates the licensees' substantial investment in these programs should yield positive safety benefits for a majority of sites. The NRC commends those licensees that are acting to ensure technically adequate and accessible design bases documentation is maintained.

However, the Commission is concerned some situations exist where licensees have not critically examined their design control and configuration management processes to identify requisite measures to ensure the plant is operating within the design bases envelope. Therefore, the Commission is articulating its expectations with regard to design information and elaborating on its planned activities to confirm the integrity of the as-configured plant with respect to the plant design bases.

Policy Statement

Position

The Commission has concluded that maintaining current and accessible design documentation is important to ensure that (1) the plant physical and

functional characteristics are maintained and are consistent with the design bases as required by NRC regulation, (2) systems, structures, and components can perform their intended functions, and (3) the plant is operated in a manner consistent with the design bases. The Commission believes the regulatory framework already exists to address the need for accessible design bases and control of design information. The availability of current design and licensing bases will also expedite the license renewal process.

The Commission believes, as a result of NRC inspections and licensees' self-assessments, that all power reactor licensees should assess the accessibility and adequacy of their design bases documentation. The results of this self-assessment should form the basis for a licensee's decision whether a design reconstitution program is necessary and the attributes to be included in the program. The Commission recognizes the need for a design reconstitution program to be tailored to meet the unique needs of a particular utility. The structure and content of the design document reconstitution program will be influenced by various factors, such as the utility's organizational structure, the availability or unavailability of design documentation, and the intended users of the documentation. The Commission expects that after completing a reconstitution program, or as a basis for concluding that such a program is unnecessary, the licensee will have current design documents and adequate technical bases to demonstrate that the plant physical and functional characteristics are consistent with the design basis, the systems, structures, and components can perform their intended functions and the plant is being operated in a manner consistent with the design basis.

NUMARC has developed guidance for the conduct of design bases reconstitution programs. The guidance outlines a framework to organize and collate nuclear power plant design bases information. This information provides the rationale for the design bases consistent with the definition of design bases contained in 10 CFR 50.2. NUMARC 90-12, "Design Basis Program Guidelines," was issued in October 1990 for voluntary use by NUMARC member organizations as a reference point from which licensees would review their

existing or planned efforts to collate supporting design information. The Commission believes NUMARC's approach provides a useful framework and worthwhile insights to those utilities undertaking design basis programs.

The Commission believes a licensee should be able to show that it has sufficient documentation, including calculations or pre-operational, startup or surveillance test data to conclude the current facility configuration is consistent with its design bases. The Commission further believes the design bases must be understood and documented to support operability determinations and 10 CFR 50.59 evaluations that may need to be made quickly in responding to plant events. The design bases related information should be retrievable within a reasonable period of time, however, it is not necessary for all design basis documentation to be organized in one place. The information used solely to support the development of a modification package would not need to be able to be retrieved as expeditiously as information needed to support an operability determination.

In the event the design bases information is found technically inadequate or not accessible, licensees should consider whether remedial action is warranted. A methodology should be developed and implemented to ensure licensee resources are focused on design information regeneration in a timeframe commensurate with the safety significance of the missing or erroneous information.

The Commission also emphasizes it is very important that modifications to a facility be made after a thorough review has been conducted and an understanding of the applicable underlying design bases has been gained in order to ensure appropriate design margins are preserved.

Future Actions

The Commission will continue to inspect routinely the adequacy of design control program effectiveness. The Commission concludes that ensuring the design bases and configuration of a facility are well understood and controlled in plant documents will also ensure that those parts of the current licensing bases of most safety significance are understood and controlled. Other aspects of the current licensing bases, such as emergency preparedness and security plans, should also be appropriately examined to

ensure their validity for the life of the facility, including any renewal period.

In order to ensure the Commission is appraised of industry's activities, the NRC will take the following actions.

(1) The staff will issue a generic letter requesting all licensees to describe the programs that are in place to ensure design information is correct, accessible, and maintained current. Those licensees that are not implementing a design reconstitution program will be requested to provide their rationale for not doing so. If a reconstitution program is under way, the schedule for implementation and completion will be requested.

(2) The staff will prioritize NRC inspections of licensee's management of design and configuration using SSFI-type techniques based upon responses to the generic letter and other plant specific information known to the NRC. Additional staff guidance will be developed, where needed, for the design bases aspects of these inspections.

(3) The NRC systematic assessment of licensee performance (SALP) process will be modified to explicitly address assessment of licensee programs to control design bases information that reflect NRC inspection activity in this area and assure consistent evaluations.

(4) The staff will continue to encourage self-identification of design bases issues through application of the provisions of the Commission's enforcement policy. The staff will, however, pursue enforcement actions for engineering deficiencies whose root cause lies in the inadequacy or unavailability of design bases information and which are identified during NRC inspections.

Paperwork Reduction Act Statement

This final policy statement does not contain a new or amended information collection requirement subject to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the Office of Management and Budget approval number 3150-0011.

Dated at Rockville, Maryland, this 4th day of August, 1992.

For the Nuclear Regulatory Commission.

Samuel J. Chilk,
Secretary of the Commission.