

AUG 1 9 1977

Docket Nos. 50-361  
and 50-362

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Gentlemen:

SUBJECT: UPGRADED STS BASES PROGRAM  
(San Onofre Nuclear Generating Station, Units 2 & 3)

The Standard Technical Specifications (STS) for each NSSS vendor type plant currently contain a bases section that provides background information and technical support for each specification. The information in the bases has proven to be useful in enabling plant operators, and others involved in the operation or licensing activities of a facility, to better understand the reasons for the various specifications. It has also been useful to both licensees and the NRC staff as a technical summary of the plant design bases and the interrelationship of many of the safety considerations associated with operation of a plant. Consequently, the bases have served not only as support for the STS, but as training material for licensee personnel and, to some extent, as a source of background material for the NRC staff in reviewing certain licensing actions. We believe a number of benefits could be gained if the STS bases were upgraded. Among the major benefits we foresee are:

1. Technical Specification change requests could be processed in less time and with reduced manpower since much of the detailed information affecting consideration of the pending change would be readily available in the bases. Since a large amount of effort is expended by each of our staffs in researching and reviewing all of the factors influencing a typical change request, we believe the potential savings in manpower effort resulting from this improvement would be significant for both licensees and the NRC.
2. The relationship and effect of each of the factors influencing the selection of technical specification limits and requirements would be more clearly understood by users of the documents thereby increasing the usefulness of the specifications as operator training material for your staff.

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AUG 19 1977

3. Questions involving interpretation of the technical specifications, that occur from time to time, could be more easily resolved between licensees and the Office of Inspection and Enforcement.
4. The continuity of detailed technical information would be preserved in a systematic manner throughout the facility lifetime thereby minimizing the adverse impact of transfer or reassignment of individuals who may possess detailed knowledge related to the evolution of the facility specifications.

Accordingly, we are initiating a program to upgrade the bases section of each generic STS. The program includes upgrading the bases for Section 2, "Safety Limits and Limiting Safety System Settings," and Sections 3 and 4, "Limiting Condition for Operation" and "Surveillance Requirements." The objective of the program is to provide a more definitive and detailed rationale for each specification in these sections. This will require some reorganization of the information currently in the bases, as well as the development of additional information. A suggested format for and the type of information that we believe should be considered for inclusion in the upgraded STS bases is provided in Enclosure 1.

As part of our continuing policy of involving the industry in the further refinement and improvement of the STSs, we are inviting your participation in this effort as one of those facilities either already in operation or scheduled for operation with STS in the near future. Your NSSS vendor is also being invited to participate. Upon completion, we will incorporate the revised bases into the STS for all future operating licenses. STS facilities in operation may then elect, at their option, to upgrade their existing technical specification bases to reflect this improvement.

We would appreciate your letting us know if you are willing to participate so that we can schedule a meeting with you, your vendor, and the other participating utilities at some time in the near future. At this meeting, we could discuss the objectives of the program, and mutually develop plans for accomplishing the upgrading of the bases in a systematic manner.

In the event you feel it would be beneficial to form a generic users group, a list of those facilities being invited to participate in this program, and who utilize the same NSSS vendor, is provided for your information in enclosure 2.

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- 3 -

AUG 19 1977

If you have any questions regarding this program, or care to discuss it further, please contact us. In any event, we would appreciate hearing from you within the next few weeks.

Sincerely,

Original Signed by

Karl Kniel

Karl Kniel, Chief

Light Water Reactors Branch No. 2

Division of Project Management

Enclosures:

1. Information to be Provided  
for Upgraded STS Bases  
Program
2. List of Facilities Requested  
to participate

cc w/enclosures:

See next page

OFFICE >	DPM:LWR #2	DPM:LWR #2	DPM:LWR #2			
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Southern California Edison Company  
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- 4 -

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ENCLOSURE NO. 1

INFORMATION TO BE PROVIDED FOR  
UPGRADED STS BASES PROGRAM<sup>1/</sup>

Fundamentally, the information in the bases for each specification should (1) describe why the specification is needed (i.e., identify its purpose), (2) explain why the quantitative values used as limits in the specification were chosen, and (3) indicate the margins of safety provided by the limits. To present this information in a clear and orderly fashion, a standardized format for the bases for each specification should be used. In our view, the standardized format should contain three basic parts: (1) Purpose, (2) Supporting Information, and (3) Margin of Safety. The information presented in each part should be in the form of concise summary statements and/or tabulations of data that serve to support the specification. The type of information that should be provided is delineated below.

1. PURPOSE

The purpose of the specification should be stated in terms of the conditions the specification has been formulated to establish or maintain. Any multiple purposes should be identified.

2. SUPPORTING INFORMATION

Information to support the quantitative values of the limits established by the specification should be provided in this part. The limiting value(s) of the specification should be supported in terms of the most restrictive plant variables or conditions used to establish the limit. In addition, pertinent information associated with the specification that relates to plant features or operating considerations should be provided. The manner in which the surveillance requirements ensure that the limits are maintained should be stated for surveillance whose intent is not obvious.

The assumptions relating to the establishment of the limiting value or condition should be stated in terms of each of the factors applicable to the specification. These factors should, where possible, include:

<sup>1/</sup> This program includes upgrading the bases for only Sections 2, 3, and 4 of the STS. Sections 5 and 6 are not included.

- a. Assumptions of initial operating conditions.
- b. Assumed allowances for instrument bias factors including error, drift and calibration considerations.
- c. Assumed uncertainties associated with measurement of physics related parameters such as void and moderator temperature coefficient, rod worth and boron concentration.
- d. Assumed allowances related to uncertainties in tank volumes including considerations of unusable fluid volumes resulting from tank physical characteristics (vortexing, suction pipe elevation). Assumed minimum pump flow and discharge pressure characteristics including allowance for expected degradation.

### 3. MARGIN OF SAFETY

The resultant margin of safety obtained from consideration of the above factors should be provided in a definitive manner such that the relationship between specification limiting values and any related safety analyses assumptions is clearly established. Methodology such as probabilistic or statistical analyses techniques or the use of cumulative addition of factors in a non-conservative manner should be stated. Conformance with applicable provisions of Regulatory Guides, General Design Criteria or the Code of Federal Regulations should also be stated where applicable.

Much of the information for part (1) and to a lesser extent, part (3) of the standardized bases format is currently provided for a number of specifications in the STS. A reorganization and expansion of this information is what is sought. On the other hand, the information relating to assumptions which is to be provided in Part (2) would be new for most of the specifications.

LIST OF FACILITIES REQUESTED  
TO PARTICIPATE IN UPGRADED STS BASES PROGRAM

NSSS VENDOR

COMBUSTION ENGINEERING

San Onofre Units 2 and 3  
St. Lucie Unit 1  
Millstone Unit 2  
Calvert Cliffs Units 1 and 2  
Palo Verde Units 1, 2 and 3  
Waterford Unit 3

JUL 26 1977

Docket Nos. 50-361  
and 50-362

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Gentlemen:

SUBJECT: DOCUMENTATION OF DEVIATIONS FROM THE STANDARD REVIEW PLAN -  
(San Onofre Nuclear Generating Station, Units Nos. 2 and 3)

I am enclosing, for your information, the staff's "Procedure for Documentation of Deviations from the Standard Review Plan," which delineates the manner in which the staff plans to utilize the Standard Review Plan (NUREG-75/087) during our review of the Final Safety Analysis Report. A meeting will be arranged at your convenience to discuss the details and implications of the Procedure.

Sincerely,

[Original Signed by

Karl Kniel, Chief  
Light Water Reactors Branch No. 2  
Division of Project Management

Enclosure:

"Procedure for Documentation of  
Deviations from the Standard  
Review Plan"

cc w/enclosure:  
See page 2

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JUL 26 1977

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ENCLOSURE 1

PROCEDURE FOR DOCUMENTATION

OF DEVIATIONS FROM THE STANDARD REVIEW PLAN

Introduction

The staff review of nuclear plant designs described in Safety Analysis Reports is performed within the guidelines established by the Standard Review Plan (NUREG-75/087), issued in September 1975, and as since amended. Use of the acceptance criteria of the Standard Review Plan as a measure of the acceptability of plant design features assures both a consistent evaluation of proposed plant designs and an acceptable level of safety for all plants licensed. The Standard Review Plan also describes and documents the acceptability of specific design approaches to satisfy certain of the acceptance criteria. We recognize, however, that alternate design approaches may satisfy these acceptance criteria equally well. Further, we recognize that, with proper justification, applicants may be able to demonstrate that particular provisions of the acceptance criteria need not be met at all.

Currently, significant difficulties arise when the Standard Review Plan is used during the operating license review of a plant design. These difficulties stem from the fact that the plant design at its construction permit stage of licensing was reviewed and approved against different guidelines due to the lack of the Standard Review Plan at that earlier stage of review; some future reviews will encounter the same difficulties due to the same reason or to changes to the Standard Review Plan that have occurred during the intervening period. In either event,

deviations will exist in the plant design relative to the then current Standard Review Plan, and the staff is or will be faced with licensing decisions regarding the acceptability of the design described in the Final Safety Analysis Report.

In the past, applicants have expended considerable efforts justifying, and the staff has spent considerable time evaluating, particular plant design features to assure an acceptable level of safety. Often these efforts have not been properly documented to clearly indicate the bases for acceptability of the design. To improve the usefulness of our Safety Evaluation Reports as a record of such decisions and to minimize the need for future reassessments of operating plants to demonstrate adequate levels of safety relative to current criteria, it is desirable that the bases for such licensing decisions be clearly documented in the Safety Evaluation Reports that summarize the staff review of the Final Safety Analysis Report. To this end, any deviations from current Standard Review Plan acceptance criteria will need to be listed and justified in the staff's Safety Evaluation Report prior to completion of the operating license stage of review. Further, such deviations will also need to be listed and justified in the licensee's Final Safety Analysis Report for any facility reviewed to the requirements of the Standard Review Plan at the construction permit stage of review.

A problem of similar type but of much less magnitude may exist with respect to some construction permit and standard design applications and associated staff reviews. Since all new applications for construction

permits or for preliminary design approval of standard designs must address the information needs identified in Revision 2 to the Standard Format and Content of Safety Analysis Reports, deviations from the acceptance criteria of the Standard Review Plan are expected to be non-existent or minimized. However, alternate design approaches may be proposed by the applicant, and it is possible that deviations may arise during the course of the review. In any event, any deviations or alternate design approaches, whether initially proposed or developed during the course of the staff review, will need to be listed and justified in the Preliminary Safety Analysis Report and in the staff's Safety Evaluation Report prior to completion of this stage of review.

This document presents the procedures that should be followed (1) by applicants and (2) by staff reviewers and Licensing Project Managers to assure that adequate documentation of deviations and alternate approaches in plant designs relative to the Standard Review Plan is provided in Safety Analysis Reports and in Safety Evaluation Reports, respectively.

#### Definition of Deviation

For the purposes of this procedure, a deviation is defined as a lack of conformance of a plant design feature to one or more provisions of the acceptance criteria given in the Standard Review Plan. An alternate and acceptable design approach to satisfying the Standard Review Plan acceptance criteria is not considered to be a deviation, but the bases for acceptability must also be documented in the Safety Analysis Report and, as appropriate, in the Safety Evaluation Report.

#### Procedure For Construction Permit Applications

The procedure for documenting deviations from the Standard Review Plan for construction permit applications requires the applicant initially to identify the deviation and provide the bases for acceptability. This information should be included in the Safety Analysis Report and reviewed by the staff as a part of the normal review process. The results of the review should be described in the Safety Evaluation Report to provide clear documentation of all deviations, including the bases for acceptability.

The same procedure should be followed for alternate design approaches.

The procedure is based on the implicit assumption that a program will be established whereby plants licensed for operation will be maintained continuously up-to-date with regard to changes in licensing requirements (i.e., at the time a new staff position is developed, a decision regarding its applicability on a generic basis or on each plant, on a case-by-case basis, will also be made and implemented).

The specific steps in the procedure for a construction permit application are:

1. The applicant will identify and provide bases for all deviations from the acceptance criteria given in the Standard Review Plan. The information should be contained in those Safety Analysis Report sections that describe the systems, components, or structures in which the deviations exist. In addition, the applicant should provide in Chapter 1 a summary listing of the deviations and an identification of the sections in the Safety Analysis Report wherein the deviations are described and justified.

2. During the acceptance review of the Safety Analysis Report, the staff should determine that this information has been provided and should inform the applicant of any obvious deficiencies.
3. Following docketing of the Safety Analysis Report, the staff should perform a review of the deviations and their bases, identify other deviations that should be discussed in the Safety Analysis Report, and request additional information as necessary at the first round request for additional information (Q-1) stage of review.
4. At the second round request for additional information (Q-2) stage of review, the staff should inform the applicant of its positions on the deviations and their bases.
5. Following review of the applicant's response, draft Safety Evaluation Report inputs should be prepared that describe each deviation and the results of the staff review of the bases for their acceptability; the Safety Evaluation Report inputs should also include a general statement denoting acceptability of the applicant's design relative to the grouping of acceptance criteria given in the Standard Review Plan sections. The Safety Evaluation Report inputs should also include discussions of any alternate approaches to staff positions that have been adopted by the applicant and the bases for acceptability.

6. The Licensing Project Manager should include a section in the Safety Evaluation Report that notes that the review has been made using the Standard Review Plan criteria as of the application docket date, tabulates all deviations from those criteria, and identifies the location in the Safety Evaluation Report where the discussion may be found.

The procedural steps given above relate to future construction permit applications. Some slight modifications to these procedural steps will be made in order to implement the procedure for construction permit applications docketed after September 1, 1976, and currently in the licensing process.

#### Procedure For Operating License Applications

The procedure for documenting deviations from the Standard Review Plan for operating license applications docketed after January 1, 1977, and for which the construction permit review was conducted in accordance with the Standard Review Plan is to be identical to that described above for a new construction permit application. The following procedure shall be followed for other operating license applications docketed after January 1, 1977:

1. The staff should perform its review of the Safety Analysis Report so as to identify any deviations from the Standard Review Plan.
2. The Safety Evaluation Report inputs provided by the technical review groups should describe each deviation and the bases

established by the staff for its acceptability; the Safety Evaluation Report inputs should also include a general statement denoting acceptability of the applicant's design relative to the grouping of acceptance criteria given in the Standard Review Plan sections. The Safety Evaluation Report inputs should also include discussions of any alternate approaches to staff positions that have been adopted by the applicant and the bases for acceptability.

3. The assistance of the applicant should not be required with respect to identification of deviations from the Standard Review Plan. If specific acceptance criteria now in the Standard Review Plan were used for evaluating the application at the construction permit phase of review, even though the Standard Review Plan either did not exist as such at the time of that review, or was not used at that time, then applicable requests for information may be made of the applicant provided that the use of the specific acceptance criteria at that stage of review is documented in the record of the construction permit review and deviations from those criteria are identified by the staff during its operating license stage of review. In addition, for all other acceptance criteria used in the design of the facility, applicable requests for information may be made of the applicant to the extent needed to permit the staff to independently judge the current acceptability of the design which was based upon such criteria. In these latter instances, however, the applicant, while it may, should




not be required to justify its design by comparing it to an alternate design developed by the applicant utilizing the acceptance criteria currently in the Standard Review Plan.

4. The Licensing Project Manager should include a section in the Safety Evaluation Report that notes that the review has been made using the Standard Review Plan criteria as of the application docket date, tabulates all deviations from those criteria, and identifies the location in the Safety Evaluation Report where the discussion may be found.

As with the procedure for construction permit applications, specific steps will be taken to assure that the implementation will be consistent with the Commission's standardization and replication policies.

Distribution w/enclosure:

Docket File 

NRC PDR

Local PDR

Branch File

LPM

LA

E. Case

R. Boyd

R. DeYoung

D. Vassallo

ELD

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J. Knight

D. Ross

R. Tedesco

R. Vollmer

W. Gammill

H. Smith

F. Williams

bcc w enclosure:

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