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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: Docket No. 50-206
Procedures Generation Package (PGP) Review
San Onofre Nuclear Generating Station
Unit 1

This letter provides as an enclosure an update of SCE's responses to the NRC's recommendations and comments regarding the Procedures Generation Package (PGP). Your recommendations and comments were transmitted to us by letter dated July 9, 1987. We provided an initial response on June 8, 1988. We indicated in that response that some of the NRC's recommendations would be considered during the next update of the Emergency Operating Instructions (EOIs) and Writer's Guide and that we would provide you our disposition of those recommendations and comments following the update.

The update of the EOIs and Writer's Guide has been completed. In order to facilitate the NRC's review, the June 8, 1988 submittal has been revised to reflect our disposition of your recommendations and comments. The revisions to the June 8, 1988 submittal are identified by change bars in the margin.

If you have any questions, please let me know.

Very truly yours,

Enclosure

cc: J. B. Martin, Regional Administrator, NRC Region V
C. Caldwell, NRC Senior Resident Inspector, San Onofre Units 1, 2 and 3

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SCE RESPONSES TO NRC
QUESTIONS ON THE SONGS 1
EOI PROCEDURES GENERATION PACKAGE

The following information quotes the NRC description of their review, and associated recommendations or questions. In response to recommendations or questions, SCE has provided below a response or position.

In a letter dated April 12, 1985, the licensee submitted its PGP for SONGS 1. The PGP contained the following sections:

- o Overview and Technical Guidelines Discussion
- o Emergency Operating Instruction Writer's Guide
- o Validation Program Description
- o Emergency Operation Instruction Training Program Description

A. Plant-Specific Technical Guidelines (P-STG)

The P-STG program description was reviewed to determine if it described acceptable methods for accomplishing the objectives stated in NUREG-0899. The licensee described a process that will take the Westinghouse Owners' Group (WOG) generic Emergency Response Guidelines (ERGs), Revision 1, which were developed for a Westinghouse standard 4-loop plant design and, with appropriate changes, develop the EOPs for SONGS 1. The licensee identified the following source documents for use in generating EOPs for SONGS 1:

- o Westinghouse Owners' Group ERGs
- o SONGS Technical Specifications
- o SONGS Final Safety Evaluation Report
- o SONGS Existing EOIs
- o Vendor-supplied information

The staff's review of the SONGS 1 P-STG identified the following concerns:

- A.1 Section 32, of the Overview and Technical Guidelines discussion, Tasks 1 through 4, describing the method of producing "marked up ERGs" from the WOG ERGs. The P-STG should reference a basis document which includes all deviations from and additions (including plant-specific bracketed information) to the generic technical guidelines and an analysis or other technical justification supporting these differences. If the "marked up ERGs" are meant to be basis documents, they should be technically complete and should be formalized and maintained as part of the P-STG.

SCE RESPONSE: The method SCE utilized in generation of the SONGS 1 EOIs was more complex than a local reshaping of generic ERGs, which could occur at latter-day design Westinghouse plants. We involved Westinghouse in the actual generation of our EOI/Background Document set, and in that regard they are plant specific. Therefore, deviations from the generic Westinghouse ERGs (Basic and Revision 1) were originally not documented.

As part of the WOG-ERG Revision 1A incorporation into the SONGS 1 EOIs, SCE has developed plant-specific Technical Guidelines. These guidelines are comprised of three sections: (1) a comparison of SONGS 1 system design with the reference plant of the WOG-ERG, (2) a review of the applicability of the reference plant analysis, and (3) a step-by-step documentation of SONGS 1 EOI/WOG-ERG deviations.

- A.2 Safety significant differences from the ERGs and their justification were not included in the PGP. If any safety significant deviations from the ERGs were identified during the development of the P-STG, they should be included and justified in the PGP.

SCE RESPONSE: Please see response to Comment A.1.

B. Writer's Guide

The Writer's Guide was reviewed to determine if it described acceptable methods for accomplishing the objectives stated in NUREG-0899. The Writer's Guide provides administrative and technical guidance on the preparation of EOIs for SONGS 1. The staff's review of the SONGS 1 Writer's Guide identified the following concerns:

1. Notes and cautions provide operators with important supplemental information concerning specific steps or sequences of steps in EOPs. The information on notes and cautions in the Writer's Guide should be revised with regard to the following:
 - a. The breaking of cautions and notes between pages disrupts the flow of information from procedures to operators. For this reason, cautions and notes should be presented entirely on one page. The Writer's Guide should state that each caution and note will appear wholly on a single page.

SCE RESPONSE: SCE has revised Section 4.5 of the Writer's Guide to provide specific instructions on breaking notes and cautions consistent with NRC guidance.

- B.1.b Sections 4.5.1 and 4.5.2 (p. B-14) stated that cautions and notes should be on the same page as the step to which they refer "whenever possible." This section should be revised to indicate that cautions and notes should appear on the same page as the referenced step at all times.

SCE RESPONSE: The Writer's Guide has been modified to indicate that cautions and notes should appear on the same page as the step to which they apply, provided they do indeed apply to a single step. In some cases a caution may apply to a complex step sequence, in which case it is desirable to retain the option to have a caution stand alone on the page immediately preceding the sequence, with appropriate indicators to make the situation clear to the operator. Therefore, SCE has implemented the NRC

recommendation to indicate that cautions and notes should appear on the same page as the referenced step, unless it applies to a sequence of steps.

- B.2 Conditional statements and logic statements should be used in EOIs to describe a set of conditions or a sequence of actions. These statements can be confusing, so it is important that the Writer's Guide provide explicit guidance for their use. The discussion of the use of logic terms in the Writer's Guide should be revised with regard to the following:

- a. It will occasionally be necessary to use AND and OR in the same sentence. To prevent operator confusion in such cases, the Writer's Guide should be revised to provide guidance and examples of acceptable usage for these situations. See NUREG-0899, Appendix B, for additional information.

SCE RESPONSE: The Writer's Guide has been revised to include this recommendation.

- B.2.b Section 4.4.1 (p. B-9) includes the word NOT as a separate logic term. The text of the Writer's Guide contains no instructions for the use of NOT as a logic term. Other than with the logic term IF the example in Section 4.4.1 indicates that NOT is to be used with IF this guidance should be explicitly stated in Section 4.4.

SCE RESPONSE: SCE has reviewed the lack of guidance regarding "NOT" usage during the recent revision. The Writer's Guide has been revised to include additional guidance on this subject.

- B.3 Section 10.0 discusses Critical Safety Function Status Trees (CSFSTs). This discussion should be revised to address the following:

- a. Section 10.2 (p. B-34) states that "CSFSTs are represented by a tree-like logic structure diagram." Since CSFSTs involve decision-making and branching, they would be more clearly presented in flow chart format.

SCE RESPONSE: The existing format has been shown to be effective in stressful situations during simulator training and actual plant transients. SCE has full endorsement of the CSFST format by Westinghouse. Therefore, based upon SCE's experience and the Westinghouse endorsement, a revision of the CSFST format into that of a flow chart is not considered necessary.

- B.3.b In Figure 5 (p. B-35), all of the text in the CSFST is capitalized. If all words are capitalized, then capitalization cannot be used for emphasis. Furthermore, text written in all capitals is more difficult to read than mixed case. The Writer's Guide should be revised to indicate that capitalization in CSFSTs will conform to

the rules established for written procedures, and Figure 5 should be revised accordingly.

SCE RESPONSE: The SONGS 1 EOIs have benefited from both human factors consultant involvement during the generation phase, and HF/Usability review of the end-product by Westinghouse. Capitalization to the extent used in the CSFSTs was included in the review and a revision was not necessary. This issue was again considered during the recent EOI revision in response to the NRC recommendation. It was determined that Figure 5 is acceptable and no revision to the Writer's Guide is necessary.

B.3.c The Writer's Guide does not specify the line spacing to be used in CSFSTs. The Writer's Guide should be revised to provide line spacing requirements. Because text can be more easily read if double-spaced, we suggest that the text in CSFSTs be double-spaced.

SCE RESPONSE: Based upon past usage, specification of CSFST line spacing within the Writer's Guide is not considered necessary.

The suggestion regarding double spacing was again considered during the recent EOI revision, and it was decided no further line spacing guidance is necessary. SCE has experienced no problems during years of usage with this present format.

B.3.d Section 10.2 states that "entry into each Critical Safety Function Status Tree is always at a point indicated by an arrow at the left side of the tree." No such arrow appears in Figure 5, the example of a CSFST. The Writer's Guide should be revised so that examples and instructions are consistent.

SCE RESPONSE: The arrow discrepancy on this figure has been corrected in a subsequent Writer's Guide revision.

B.4 Referencing of and branching to other procedures or sections of procedures can be disruptive and can cause unnecessary delays. Section 4.3 (p. B-9) discusses cross-referencing. The guidance offered in this section should be revised as follows:

- a. Section 4.3 discusses the delays that can result from cross-referencing. Because it is important to minimize these delays, Section 4.3 should discuss the criteria to be used when deciding if the necessary steps should be included in the text of the procedure or if cross-referencing should be used.

SCE RESPONSE: Cross-referencing in the SONGS 1 EOIs is utilized sparingly. Generally it is avoided, unless procedural clutter would otherwise result. Notwithstanding this observation, a discussion has been included in the revised Writer's Guide, Section 4.3.

- B.4.b Section 4.3 does not discuss the proper format for a cross-reference. Although Table 5-1 (pp. B-20 - B-21) includes the terms GO TO, IMPLEMENT, and RETURN TO, which are apparently to be used when cross-referencing, Section 4.3 should specifically discuss the correct use of these terms when cross-referencing.

SCE RESPONSE: The Writer's Guide has been revised to include this recommendation.

- B.4.c The entire step number should be used at each of the two step levels. Then, if an operator is told to go to Step 4.b, for example, the entire step number will be in front of the step and there will be no confusion on the part of the operator as to whether he is at the correct step.

SCE RESPONSE: SCE uses indentation as a way of distinguishing sub-steps within a particular high-level step. Using the entire step number at each sub-step level would add unnecessary alphanumeric "noise." SCE has not experienced problems with step number confusion either during validation, or ongoing simulator training. Therefore, it is not considered necessary to alter this practice.

- B.4.d To facilitate rapid movement from one part of EOIs to another, some method for easily identifying sections or subsections in the EOI, such as tabbing, should be specified.

SCE RESPONSE: Each EOI is separated from others by tabbing within the control room binders. SCE does not employ tabbing among sections within a single instruction. The executive step summary is used, if organization, location, or strategy questions arise.

- B.4.e An example of a properly formatted cross-reference should be provided in Section 43.

SCE RESPONSE: The Writer's Guide has been revised to include this recommendation.

- B.5 The proper use of emphasis techniques can make procedures easier to understand. The following portions of the Writer's Guide, which discusses emphasis techniques, should be revised:

- a. Section 3.1 (p. B-4) states that the text of a top-level action step should be underlined. The examples of top-level action steps given in Figure 2 (p. B-6) are not underlined. The Writer's Guide should be revised so that examples and instructions are consistent.

SCE RESPONSE: This error has been corrected in a subsequent revision to the Writer's Guide.

- B.5.b Section 4.4.3 (pp. B-10 - B-11) states that simple or compound conjunctions need not be capitalized or underlined; yet the conjunction "and" is capitalized in the example of an acceptance value given in Section 5.5 (p. B-19). The Writer's Guide should be revised so that examples and instructions are consistent.

SCE RESPONSE: The Writer's Guide has been revised to include this recommendation.

- B.6 Vocabulary and syntax used in EOIs should be readily understood by both procedure preparers and operators. So that EOIs can be clearly understood, the Writer's Guide should be revised as follows:

- a. Section 4.4.5 (pp. B-11 - B-13) gives a list of "Preferred Conditional Words". This list should be expanded from a list of "preferred conditional words" to an inclusive list of acceptable conditional words.

SCE RESPONSE: Adopting this recommendation would create a situation wherein Writer's Guide changes would need to be made for any occasion when a new and appropriate conditional word or term is implemented. Therefore, it is not considered appropriate to implement this recommendation.

- B.6.b Table 5.1 (p. B-20), the list of "Preferred Verbs," include the word "locally," which is an adverb. The use of "locally" as a verb could lead to operator confusion during the execution of EOIs. To eliminate such confusion, the list of "Preferred Verbs" should include only verbs.

SCE RESPONSE: Table 5-1 identifies "locally" as an adverb to eliminate any operator confusion during the execution of EOIs.

- B.7 Instructions should be written for the various types of action steps that an operator may take to cope with different plant situations. The guidance provided in the Writer's Guide for writing instruction steps should be revised as follows:

- a. The Writer's Guide should address the definition of and formatting for the following types of action steps: (1) steps that are performed nonsequentially, and (2) steps that are performed concurrently with other steps.

SCE RESPONSE: SCE has evaluated the need for further procedural guidance regarding nonsequential and concurrent steps. Accordingly, Section 4.6 of the Writer's Guide has been revised to provide this guidance.

- B.7.b Section 4.6.1 (p. B-15) discusses recurrent steps. Because EOIs will be executed under stressful conditions, operators may not remember to repeatedly perform these steps. Although Section 4.6.1 indicates that direction will be provided to operators to perform

recurrent steps, it should define the method to be used to tell operators how often to perform, and when to stop performing, a recurrent step.

SCE RESPONSE: Based upon SCE training experience, the recurrent step discussion in the Writer's Guide is considered adequate and a revision is not considered necessary.

B.7.c Section 4.6.3 (p. B-16) indicates that diagnostic steps will be used in S01-1.0-10, REACTOR TRIP OR SAFETY INJECTION. So that writers can produce procedures that are consistently and correctly formatted, Section 4.6.3 should specifically discuss the formatting of diagnostic steps.

SCE RESPONSE: Diagnostic steps do not possess unique formatting. The term is used to describe the functionality of a small sequence of steps within S01-1.0-10. As part of the recent EOI revision, SCE has reviewed the section of the Writer's Guide addressing this subject, and as a result, the Writer's Guide was revised. This information is now presented in Section 4.6.5 of the Writer's Guide.

B.7.d Section 3.3 (p. B-5) states that substeps in the Response Not Obtained column that apply to all substeps in the Action/Expected Response column will be "written only one and identified with a bullet (o)". This bullet could be confused with the lower-case letter "o". Furthermore, when this bullet is used in Figure 2 (p. B-6), it is followed by a period; this use of punctuation could contribute to the confusion between "o" and the bullet. The formatting specifications for bullets should be revised to eliminate this ambiguity (e.g., use "°" instead of "o").

SCE RESPONSE: The Writer's Guide has been modified subsequent to the PGP submittal to clearly distinguish a "bullet" from a lower-case "O." The example, furthermore, is now consistent with the text. With respect to the period following the bullet, its presence was unintentional, and has been corrected.

B.7.e To minimize confusion, delays, and errors in the execution of EOI steps, instruction steps should be written so that physical conflicts between operators and unintentional duplication of tasks by operators will be minimized. The Writer's Guide should address this principle.

SCE RESPONSE: Section 4.1 of the Writer's Guide was revised to include this principle during the recent EOI revision.

B.8 Information should be presented so that interruptions in the flow of information are minimal. The rotation of a page disrupts the flow of information from procedures to operators. For this reason, we recommend that the rotation of pages should not be allowed. Section 6.5 (p. B-25) should be revised to indicate that the rotation of pages is unacceptable.

SCE RESPONSE: It is agreed that information flow interruptions should be minimized. The Writer's Guide provides guidance concerning page rotation, but SCE does not presently make a use of page rotation within the EOI set. A Writer's Guide change to eliminate the page rotation option is not considered necessary.

B.9 Acronyms and abbreviations used in EOIs should be readily understood by procedure writers and plant operators. So that EOIs can be clearly understood, the Writer's Guide should be revised with regard to the following:

- a. Table 5-2 (p. B-22) is a list of "Preferred Acronyms and Abbreviations". This list should be expanded from a list of "preferred" acronyms and abbreviations to an inclusive list of acceptable abbreviations and acronyms.

SCE RESPONSE: Please see response to Comment B.6.a.

B.9.b Figure 4 (p. B-32), the example of a flow chart, includes the acronym "SUR". If this acronym is to be used in EOIs, it should be included in the inclusive list of abbreviations and acronyms.

SCE RESPONSE: The Writer's Guide was revised to include this recommendation during the recent EOI revision.

B.9.c Section 5.2 instructs writers to pluralize abbreviations and acronyms by the use of "'s". The apostrophe should only be used if the abbreviation or acronym ends with a period.

SCE RESPONSE: The Writer's Guide has been revised to clarify that pluralization of abbreviations/acronyms should be accomplished by following the last letter with a lower case letter "s" without the use of an apostrophe. The apostrophe will only be used if the abbreviation or acronym ends with a period.

B.9.d Section 5.2 states that abbreviations and acronyms referenced in EOIs will match panel markings "where applicable". To ensure that an operator is easily able to recognize the equipment and controls mentioned in procedures, the Writer's Guide should describe a method that will allow the operator to directly associate abbreviations and acronyms with control panel markings in all instances.

SCE RESPONSE: Section 5.2 of the Writer's Guide was revised during the recent EOI revision to be more specific in this regard.

B.10 To ensure that EOIs will at all times be legible, we recommend that no part may be handwritten. Section 6.1 (p. B-23) notes that handwritten labels may be used on figures. Section 6.1 should be revised to indicate that labels will not be handwritten.

SCE RESPONSE: If a label or item of text is not legible, and this is mainly, if not exclusively, in reference to graphic annotations within background documents, it will not escape the site interdisciplinary review process. The use of handwritten labels is avoided, if possible, and SCE considers a change to the Writer's Guide to be unnecessary.

B.11 It is important that operators know where to find all instruments and controls that are referenced in the EOIs. Section 4.2 (p. B-8, fourth bullet) states that if a component would be difficult to find, location information should be given in parentheses. The Writer's Guide should be expanded to provide the format to be used when presenting location information. An example should also be provided.

SCE RESPONSE: The addition of location information mainly applies to annunciator windows. SCE believes that an example would be helpful to future procedure writers, and therefore it was added to the Writer's Guide during the recent EOI revision.

B.12 EOIs should be reviewed and approved by qualified individuals to ensure their accuracy. There is no provision in the Writer's Guide for review and approval signatures on the EOI cover pages. So that the review and approval process can be documented, the Writer's Guide should state that these signatures will be included on the cover page.

SCE RESPONSE: EOIs are reviewed and approved by qualified individuals in accordance with existing site administrative procedures. At SONGS, this review and approval process is documented on a form separate from the procedure cover page and applies to all procedures. Therefore, a revision to the Writer's Guide is not considered necessary.

B.13 Section 6.8 (p. B-26) and Section 9.1.5 (p. B-31) discuss High-Level Step Executive Summaries and Background Document flowcharts. To enhance the usability of this supplemental information, the Writer's Guide should be expanded to address the following points:

- a. Executive Summaries are used to show operators the broad view of an entire EOI and their position within the EOI. This information can be valuable to operators. However, the information contained in an Executive Summary would be better presented in standard flowchart format, rather than the format shown in Figure 3 (p. B-27). If a standard flowchart format was used, operators would be able to more easily follow the path through the EOI. The formatting instructions for Executive Summaries should be revised to more effectively present information to operators.

SCE RESPONSE: Based upon past use of the Executive Step Summaries, the presentation of the information is appropriate and effective. Therefore, SCE concludes that use of a flow chart format would not be a significant improvement. The step summary is not a training tool; it is simply a reference for an operator's use

in quickly discerning his location within the EOI, and "where he is going." To add rigor to the existing summary could be counter-productive, and a revision to modify or add greater detail to the Executive Summaries will therefore not be implemented.

- B.13.b Aside from the example of Figure 3, the Writer's Guide gives no formatting instructions for Executive Summaries. The text of the Writer's Guide should be revised to include such formatting instructions (e.g., acceptable symbols, pitch size, margins, level of detail, use of headings) so that Executive Summaries can be consistently prepared by procedure writers.

SCE RESPONSE: Additional guidance, with regard to Executive Summaries, has been provided in Section 6.8 of the Writer's Guide.

- B.13.c In Figure 3, the entire text of the Executive Summary is capitalized. If all words are so capitalized, then capitalization cannot be used for emphasis. Furthermore, text written in all capitals is more difficult to read than mixed case. For these reasons, capitalization in Executive Summaries should conform to the rules established in the Writer's Guide for written procedures.

SCE RESPONSE: The revised Executive Summaries for all EOI procedures and the revised example in Figure 3 now utilize mixed capitalization. All high level steps in the summary have the first letter of each word capitalized, with the remaining letters in lower case.

- B.13.d In Figure 3, the conditional Statement "12x10~" appears to the left of Step 1. All instrument readings should include units of measure so they will not be misunderstood by operators. The Writer's Guide should be revised to reflect this concern.

SCE RESPONSE: Section 6.8 of the Writer's Guide was revised to include this recommendation during the recent EOI revision.

- B.13.e Figures 3 (p. B-27) and 4 (p. B-32) contain the term "PROCEDURE IN EFFECT". This term is not defined in the Writer's Guide and its use is not discussed. So that writers can prepare Executive Summaries and flowcharts that are consistently and correctly formatted, the Writer's Guide should be revised to define and discuss this term.

SCE RESPONSE: Discussion of the term "PROCEDURE IN EFFECT" has been added to the Writer's Guide, Section 4.3.

- B.13.f Section 9.1.5 (p. B-31) discusses flowcharts. Although these flowcharts are apparently not used by operators during emergency conditions, the flowcharts should be consistently and correctly formatted. If these flowcharts are to be prepared by procedure writers, appropriate guidance should be provided in the Writer's

Guide (e.g., one of the diamond-shaped boxes in Figure 4 (p. B-32), the example of a flowchart, gives no option if the decision is no).

SCE RESPONSE: During the recent revision effort, EOI users and authors were surveyed with regard to flow chart utility and upkeep. As a result, SCE has eliminated flow chart diagrams from the EOI background documents.

B.14 Section 4.1 (p. B-7, sixth bullet) states that limits should be expressed quantitatively "whenever possible." This requirement should be revised to include the specific criteria used to determine if a limit should not be expressed quantitatively. An example should be provided.

SCE RESPONSE: Section 4.1 of the Writer's Guide was revised to include this recommendation during the recent EOI revision. However, it was determined that an example was not necessary.

B.15 Section 6.3 (p. B-24) discusses foldout pages. This section should be revised to address the following:

- a. Foldout pages are subject to wear that may lead to tearing. Thus we recommend that the Writer's Guide should be revised to either specify another format be used to present the information contained on the foldout page or to state the manner in which such disadvantages of foldouts will be overcome.

SCE RESPONSE: During the recent revision to the EOIs, it was determined that the information that was provided in the foldout page can be better conveyed as continuous action (floating) steps provided on the reverse of each procedure page.

B.15.b Although specific formatting instructions may depend on the quantity of information required on the foldout page, this section should be expanded to address general formatting instructions.

SCE RESPONSE: The floating step page has replaced the foldout. Guidance on purpose and format appears in Section 6.3 of the Writer's Guide.

B.16 To prevent operator difficulty in reading EOIs, it is important that the quality of EOI copies approximate the quality of the original document. The Writer's Guide should be revised to address the following concerns:

- a. Section 8.0 (p. 29) should be revised to include the specific criteria for reproduction of EOIs, beyond saying that reproduction "should be in accordance with Station Administrative Controls." See NUREG-0899, Section 6.6.2 for further information. Alternatively, the appropriate Station Administrative Controls should be provided for review.

SCE RESPONSE: SCE has established a station procedure to describe the requirements for reproduction and distribution of plant

procedures. The requirements of this procedure are consistent with the guidance in NUREG-0899.

- B.16.b Section 10.2 (p. B-34) discussed the use of color coding within the CSFST to indicate the priority of the response required to reestablish the Critical Safety Function. The Writer's Guide should describe how color-coded CSFSTs will be produced and reproduced so that color coding is maintained.

SCE RESPONSE: Production of color graphics within procedures has not yet become a common practice at SONGS 1. This was recognized in the EOI generation phase, and resulted in the use of color-analogous symbology described on page B-34 of the Writer's Guide. Subsequently, the controlled EOI copies used in the Control Room have been produced with color graphics. All other controlled copies of the EOIs continue to utilize the color-analogous symbology.

Section 8.0 of the Writer's Guide has been revised to provide additional guidance with regard to control of color coding and to indicate that the color graphics and color-analogous symbology are interchangeable.

- B.16.c Section 6.6 (p. B-25) discusses the use of reduced pages in EOIs. Section 6.6 should include specific readability standards for reduced pages, beyond saying that such pages "should be standard page size to improve readability."

SCE RESPONSE: Section 6.6 of the Writer's Guide has been revised to include additional guidance on reduced text. The Writer's Guide requires reduced text to conform to the readability standards of NUREG 0700, "Guidelines for Control Room Design Reviews". In addition, the Writer's Guide indicates that reduced text must remain standard page size to facilitate processing.

- B.17 Because they will be used in stressful circumstances and under time constraints, EOIs must be easily accessible to operators and easily identifiable. The Writer's Guide should address the accessibility of EOIs and techniques to distinguish them from other plant procedures.

SCE RESPONSE: Section 8.0, "Reproduction and Document Control" of the Writer's Guide has been revised to address the accessibility and identification of the EOIs. The EOIs occupy a set of red binders at the front of the control room procedure set. The Writer's Guide indicates the EOIs will be maintained in these colored binders at a location within the control room which is easily accessible to ensure operators can readily locate the EOIs in an emergency situation.

- B.18 EOIs must be current to be usable. The Writer's Guide should describe a system that will ensure EOIs are updated in a timely fashion when changes

occur in plant design, Technical Specifications, technical guidelines, the control room, or other plant procedures that affect EOIs.

SCE RESPONSE: SCE will enhance the procedure (Section 6.1) to provide specific guidance in this area.

C. Verification and Validation Program

The description of the validation program was reviewed to determine if it described acceptable methods for accomplishing the objectives stated in NUREG-0899. The verification and validation program described in the PGP identifies as its objectives the assurance that:

- o the EOIs should accurately reflect WOG Guidelines;
- o the EOIs should accurately reflect the Writer's Guide;
- o the EOIs should use language and present information at a level that is compatible with the minimum number, qualifications, training, and experience of licensed operators;
- o the EOIs should reference controls, equipment, and hardware that are available. This equipment should have the same designation, units of measure, and method of operation as specified in the EOI;
- o the EOIs can be understood and followed without confusion, delays, or errors; and
- o the EOIs are assured to guide the licensed operator in mitigating transients and accidents.

The staff's review of the verification and validation program description identified the following concerns:

1. We recommend that procedure writers and human factors experts should be involved in desk top reviews, round table reviews, and simulator exercises. The criteria for the selection of these personnel and the roles and responsibilities of these personnel should be specified.

SCE RESPONSE: The Westinghouse review discussed in our submittal text is essentially a round table performed by plant operations and analysis engineers. Usability/human factoring is included as a review criterion. Therefore, the use of HF experts is not considered necessary for desk top and round table reviews. With respect to simulator exercises, an HF expert is not considered necessary. The exercises are based on the EOIs which were developed with HF considerations. Operations supervision familiar with the exercises and the control room design evaluate the simulator exercises for performance. Therefore, maintaining an HF expert for simulator exercises would not be worthwhile. Procedure writers are involved in the review process, both on procedures they have authored, and on those generated by other writers within the group.

SCE has reviewed the desirability of establishing more specific criteria (roles/responsibilities) for round table

reviews, and based on experience we believe the current guidance in Section 2.3 is adequate. It is noted that the round table reviews held as part of operator training were effective due to the open forum for comment, versus the results that might be obtained while adhering to a review checklist. With regard to selection of personnel, the guidance in Section 2.1 is considered adequate.

C.2 The validation program states that a combination of desk top, plant/control room, round table reviews, and simulator reviews will be used for procedure validation. The following items regarding procedure validation should be addressed:

- a. The verification and validation program should state that the simulator method, when applicable, is a necessary method of EOI validation. A review of the capabilities and the limitations of the generic simulator will identify what can be validated on the simulator.

SCE RESPONSE: SCE has been using the Zion simulator since 1983. Since that time, many software and, to the extent practical, hardware changes have been implemented by SCE. As part of the validation process, a determination was made as to which EOIs and which EOI steps could be validated on the simulator. The general limitations of the simulator were discussed by the validation team and, as problems were encountered during the validation, resolution of the limitations were discussed and appropriate compensatory actions taken. Additionally, it is noted that in order to comply with 10 CFR 55, Operator's License, SCE currently plans to obtain a plant specific reference simulator. Accordingly, a review of the capabilities and limitations of the generic simulator specifically for the PGP is no longer considered necessary.

C.2.b For the parts of the EOIs that cannot be validated on the simulator, criteria for selecting the appropriate validation method(s) (e.g. control room walk-throughs/talk-through) should be specified.

SCE RESPONSE: All procedures receive the same validation regardless of whether or not a simulator exercise can be executed. Therefore, it is not necessary to develop the recommended selection criteria.

C.3 Particular attention should be paid to deviations from and additions to the generic technical guidelines that are of safety significance during the verification and validation program. The steps can be accomplished separately or as a part of the program. The PGP should discuss how the deviations from and additions to the generic guidelines are to be verified and validated.

SCE RESPONSE: SCE, to the extent possible, validates all EOI steps in the same rigorous manner, regardless of the extent to which they

may be viewed as deviating from the ERGs. SCE does not rely on Westinghouse ERG validation activities (including simulator) except in instances where the simulator used is unable to physically create a certain exercise scenario. In those instances, only the simulator portion may be incomplete; other validation activities are performed in accordance with Section 1.1 of the validation program description.

One of the activities specified in Section 1.1 is the Writer's Guide Adherence/Technical Review. This review was recently strengthened by requiring an ERG deviation evaluation as a part of the evaluation for Westinghouse response strategy preservation.

D. Training Program

The description of the operator training program on the upgraded EOIs was reviewed to determine if it described acceptable methods for accomplishing the objectives stated in NUREG-0899. The PGP lists the following objectives for the training program:

- o to enable operators to understand the structure and format of the upgraded EOIs;
- o to provide the operator with a working knowledge of the technical content of the upgraded EOIs; and
- o to enable operators to use the upgraded EOIs under operational conditions.

The staff's review of the training program description for EOIs identified the following concerns:

1. The PGP should contain a statement of commitment to train all operators on all of the EOIs.

SCE RESPONSE: This commitment is implied and required by terms and conditions in the SONGS 1 Operating License and, therefore, a specific commitment in this regard is not necessary.

2. The training program description indicates that generic simulator exercises will be conducted. The following items regarding simulator training should be addressed:

- a. When a generic simulator is used, it is not possible to fully exercise all parts of the EOIs. The training program description should describe a method for ensuring that operator training will cover areas missed in the simulator exercises.

SCE RESPONSE: The SONGS 1 Licensed Operator Training Program describes a method for ensuring that operator training will cover all areas in the EOIs. In addition, SCE is pursuing installation of a plant specific reference simulator which will resolve this issue.

D.2.b Control room walk-throughs should include a wide variety of scenarios.

SCE RESPONSE: Control room walk-through reviews are conducted in the actual control room. The "scenario" is the event for which the EOI was generated.

D.2.c An indication should be made of planned operator roles and teamwork.

SCE RESPONSE: This is addressed in the validation program and appropriately amplified in the training program description Section 2.2.

JAH:eoiresp