

NUREG-0737, SUPPLEMENT 1
EMERGENCY RESPONSE CAPABILITY
PROGRAM PLAN AND SCHEDULE

SAN ONOFRE NUCLEAR GENERATING STATION
UNIT 1

April 1985

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INTRODUCTION

The NRC provided Supplement 1 to NUREG-0737 as an enclosure to a letter from D. G. Eisenhower to All Licensees of Operating Reactors (Generic Letter No. 82-33), dated December 17, 1982.⁽¹⁾ Supplement 1 defined the requirements for emergency response capability that, when implemented, would provide a consistent level of emergency response capability among all licensees. The NUREG's and Regulatory Guides that Supplement 1 references are intended to be utilized as guidance for an acceptable means for meeting the basic requirements of the initiatives.

As previously indicated in our letter of April 21, 1983,⁽²⁾ we have partially implemented the initiatives of Supplement 1. This level of implementation is a result of our attempts to implement the early requirements of NUREG-0578 and NUREG-0737 regarding emergency response capability. In a few cases this early effort has resulted in some differences between our facilities and systems, and the final guidance of Supplement 1. We will rely on the NRC commitment in Supplement 1 to make allowances for work already done in good faith effort to meet the requirements as we understood them.

Successful emergency drills have been conducted at San Onofre Unit 1 and judged acceptable by both the NRC and FEMA. Therefore, we are currently in a good position to respond to any emergency condition that might occur at San Onofre Unit 1. This present emergency response capability at San Onofre Unit 1 provides confidence that sufficient response capability will exist during the time required to implement the entire San Onofre Unit 1, Supplement 1 Emergency Response Capability Program described herein.

SCE concurs with the NRC's position that schedules for accomplishing these emergency response capability enhancements should be integrated with other high priority regulatory work and plant improvements. This is currently established for all San Onofre Unit 1 regulatory work and plant betterment work in the form of the Integrated Living Schedule (ILS). The San Onofre Unit 1 responses to the Supplement 1 initiatives were scheduled into the Cycle IX refueling outage work by our letter of February 27, 1984.⁽¹²⁾ As discussed in the following sections, the scope of any plant modifications that will result from the implementation of the Supplement 1 initiatives will not be established until the completion of the initial evaluations required by each initiative. The scope of any plant modifications will have to be considered for integration into the ILS at the time the initial evaluations are complete. It is this process that will determine the final schedule for the implementation of our full compliance with Supplement 1.

It is the purpose of this document to provide an updated description of our current status with regard to the initiatives of Supplement 1, a description of our plans to meet the requirements of each initiative, and a milestone schedule of the activities described herein. Since we have essentially completed our responses to address the ERF and the upgraded EOI's, the program plan focuses on the control room enhancement oriented initiatives. Figure 1 shows a general flow of events required to complete our response to Supplement 1. The final section provides a complete description of the integration of each element of the program into the complete program plan described in Figure 1. Appendix 1 provides a milestone schedule of events and transmittals required by Supplement 1. The report is formatted to correspond to the initiatives of Supplement 1 and a list of references is provided as Appendix 2.

CURRENT STATUS AND PROGRAM PLAN FOR SUPPLEMENT 1
SAN ONOFRE UNIT 1

SAFETY PARAMETER DISPLAY SYSTEM (SPDS)

Our letter of October 17, 1979⁽³⁾ contained our response to NUREG-0578, Item 2.2.2.b, Onsite Technical Support Center, in which we stated that we would install a Technical Data Display and Transmit System in the Technical Support Center (TSC). Our letter of July 1, 1981⁽⁴⁾ provided the NRC with the design description of the above mentioned system and indicated that it also contains the capability to transmit the data, via modems, to the offsite Emergency Operations Facility (EOF). This data display and transmission system, currently installed, is not intended to comply with the requirements for an SPDS.

As stated above in the description of the SPDS current status at San Onofre Unit 1, we currently have a technical data transmission system that allows the persons in the TSC and EOF to receive plant status information during an emergency condition. However, the current system has not been evaluated to determine its adequacy in fulfilling the SPDS function and, due to space constraints, it does not currently have a control room display. Since we currently have this technical data transmission capability, we intend to delay SPDS criteria development until the role of the SPDS in resolving control room Human Engineering Discrepancies (HED's), is established as part of the CRDR. Therefore, we will delay the completion date of SPDS design criteria development until the HED resolution phase of the CRDR. The schedule for the SPDS design criteria development is shown in Appendix 1.

The SPDS design criteria when developed will utilize the San Onofre Unit 1 upgraded EOI's to establish the Critical Safety Functions (CSF's) for the SPDS. The design criteria will specify the role of the SPDS, the intended users of the SPDS, the selection of location for the SPDS and specify the availability of the hardware. As stated above, important to the role of the SPDS, may be the use of the SPDS to resolve control room HED's.

DETAILED CONTROL ROOM DESIGN REVIEW (CRDR)

This requirement was initially set forth in NUREG-0737 as Item I.D.1. However, the NRC deferred implementation until NUREG-0700, "Guidelines for Control Room Design Reviews" could be finalized. NUREG-0700 was published in September 1981. Despite the issuance of NUREG-0700, the NRC had not yet taken action to require licensees to perform a control room design review until the issuance of Supplement 1. The plans to perform a CRDR for San Onofre Unit 1 per Supplement 1 are described below.

The CRDR Program Plan is the first step toward performing a CRDR and provides the direction for performing the entire review. In order to develop the CRDR Program Plan, we will have to determine the desired level of SCE involvement in the CRDR and procure the services of outside consultants to augment our capability as necessary. Therefore, the lead time, as shown in Appendix 1 to transmittal of the CRDR Program Plan to the NRC reflects these preliminary activities. The flow of activities to complete the CRDR are as shown in Figure 1 and the projected milestones are shown in Appendix 1.

The Operating Experience Review portion of the CRDR will be performed to identify any operational problems resulting from design discrepancies or identify any improvements to the control room that would improve the operator's ability to respond to an emergency condition. The review will survey experienced operators, reactor trip reports, significant event reports and operator logs.

The function and task analysis will delineate the specific operator actions and informational needs to accomplish system functions. The Westinghouse Emergency Response Guidelines and the upgraded EOI's will be utilized as a technical basis for this portion of the CRDR. The initial phase of this analysis will focus on the definition of the operator tasks and informational needs to perform a given system function. The final phase of this analysis will evaluate the performance of the tasks in the San Onofre Unit 1 control room in order to define any HED's present.

The Control Room Survey portion of the CRDR will review the San Onofre Unit 1 control room for compliance with commonly accepted human engineering guidelines. The survey will include, among other things, an assessment of control room layout, the control room environment, the usefulness of audio and visual alarms, the readability of displays, the adequacy of instrumentation and the information recording and recall capabilities. A comparison of the display and control requirements with the control room inventory will occur as part of our response to Reg. Guide 1.97.

The CRDR Program Plan will describe the content of the multidisciplinary review team for the CRDR. A description of all of the elements described above will provide the bases for the performance of the CRDR. The program plan will also describe the criteria to be applied when resolving the HED's, including a method for determining the significance of each HED, and provide for the integration of any modifications to the control room required as part of the Reg. Guide 1.97 work.

REGULATORY GUIDE 1.97

Regulatory Guide 1.97 (Rev. 2) was issued in December, 1980 and has been implemented at San Onofre Unit 1 only where appropriate as a design criteria for instrumentation backfits required to respond to NUREG-0737 requirements. The balance of the accident monitoring capabilities described in Regulatory Guide 1.97 (Rev. 2) have not been committed for San Onofre Unit 1.

Prior to the issuance of Supplement 1, we initiated a survey of our compliance to Regulatory Guide 1.97 (Rev. 2). This survey was performed by Westinghouse and essentially completed in June, 1983. The use of this survey to respond to the requirements of this Supplement 1 initiative are described below.

As stated above in the description of the current status of Reg. Guide 1.97 at San Onofre Unit 1, we currently have a survey of our compliance to Reg. Guide 1.97 (Rev. 2). This survey needs only to be verified for accuracy to be completed. However, the survey does not attempt to justify any deviations from the guidance in Reg. Guide 1.97 (Rev. 2). Utilizing this survey, we will develop a plant-specific response to Reg. Guide 1.97 (Rev. 2) for San Onofre Unit 1. It will be the intention of the plant-specific effort to minimize the backfit requirements while maximizing the safety benefit. This effort will result in a report to the NRC of our current status relative to Reg. Guide

1.97 (Rev. 2), justify any deviations, propose modifications where necessary and provide for integration into the remaining Supplement 1 initiatives. The flow of activities to respond to Reg. Guide 1.97 (Rev. 2) and its relationship to the other elements of our implementation plan is shown in Figure 1. The schedule for the major milestones is shown in Appendix 1.

UPGRADE EMERGENCY OPERATING INSTRUCTIONS (EOI's)

This requirement was initiated by NUREG-0737, Item I.C.1. Our previous position, as defined in our letter of August 6, 1981,⁽⁵⁾ has been that the Westinghouse Owners Group had addressed this item adequately. In response to an NRC request for upgrades to particular EOI's for San Onofre Unit 1, we provided, by letter dated September 13, 1982,⁽⁶⁾ the final versions of the requested procedures.

After that date we initiated the long-term procedure upgrade effort, originally scheduled to be completed in June, 1983. During a meeting on October 7, 1982, we informed the NRC of our final implementation schedule for the completion of the training and implementation for the EOI upgrade effort. The schedule was updated to the Fall, 1983 by letter dated February 16, 1983.⁽⁷⁾

Our letter of April 12, 1985⁽⁸⁾ provided the NRC with the procedures generation package required by Supplement 1. The EOI's have been implemented at San Onofre Unit 1 and as described in a later section we have made provisions in our schedules for other Supplement 1 initiatives to revise the EOI's if the implementation of upgrades required by our response to the initiatives would require a change to the EOI's.

As stated in the description of the EOI current status at San Onofre Unit 1, we have already submitted the procedures generation package and the EOI's are implemented at San Onofre Unit 1. As stated in other sections of the program plan, the EOI's will be used as a technical basis for our responses to other initiatives to Supplement 1. As shown in Figure 1, the overall Supplement 1 Program Plan also includes provisions to revise the EOI's if the implementation of any of the remaining Supplement 1 initiatives impact the EOI's in such a way as to require an EOI revision.

EMERGENCY RESPONSE FACILITIES (ERF's)

The Emergency Response Facilities consist of the TSC, OSC and EOF as detailed below:

- a. Technical Support Center (TSC) - The requirements for the TSC were initiated by Item 2.2.2.b of NUREG-0578, and later revised in NUREG-0737 and NUREG-0696. We committed to the implementation of an onsite technical support center in our letter of October 17, 1979.⁽³⁾ We updated this commitment in our letter of January 17, 1980,⁽⁹⁾ which provided the NRC with details of what technical data would be available in the TSC via the technical data display system. We informed the NRC in our letter of July 1, 1981⁽⁴⁾ that the TSC would be completed by October 1, 1982.

The TSC, as a facility, meets the requirements of Supplement 1. The technical data display and acquisition capability, as installed, meets the commitments in our letter of July 1, 1981, but it does not meet the guidance in Supplement 1. As previously described, currently there are no detailed plans to upgrade this system until the resolution of our plans for the SPDS initiative.

- b. Operational Support Center (OSC) - The requirements for the OSC were initiated by Item 2.2.2.c of NUREG-0578 and later revised in NUREG-0737 and NUREG-0696. We committed to implementing an OSC in our letter of October 17, 1979⁽³⁾ and informed the NRC that our OSC was operational in our letter of July 1, 1981.⁽⁴⁾ The OSC meets the criteria of Supplement 1.
- c. Emergency Operations Facility (EOF) - The requirements for the EOF were initiated by NUREG-0660 and later revised by NRC letter dated February 18, 1981.⁽¹⁰⁾ The functional criteria for the EOF is contained in NUREG-0696. In our letter dated July 1, 1981,⁽⁴⁾ we informed the NRC of our conceptual design and scheduled implementation date of October 1, 1982. The EOF, as a facility, meets the criteria of Supplement 1, with the exception of the distance to the backup EOF previously discussed in our letter of December 7, 1982.⁽¹¹⁾ The technical data display and acquisition capability, as installed, meets what was committed to in our letter of July 1, 1981,⁽⁴⁾ but has not been evaluated against the requirements of Supplement 1. Currently there are no plans to consider upgrade to this data display and acquisition capability until the resolution of the SPDS initiative.

As stated above, we currently have implemented the requirement to have a Technical Support Center (TSC), an Operational Support Center (OSC) and an Emergency Operations Facility (EOF). These facilities meet the requirements of Supplement 1 and, as previously stated, have already been used in successful emergency drills at San Onofre Unit 1. The data acquisition, storage, analysis, display and communication requirements for these facilities, as described in Supplement 1, will be addressed as part of our response to the SPDS initiative. As shown in Figure 1, we have also provided for the incorporation of any changes to the ERF's mandated by the implementation of the remaining Supplement 1 initiatives.

INTEGRATION AND SCHEDULE

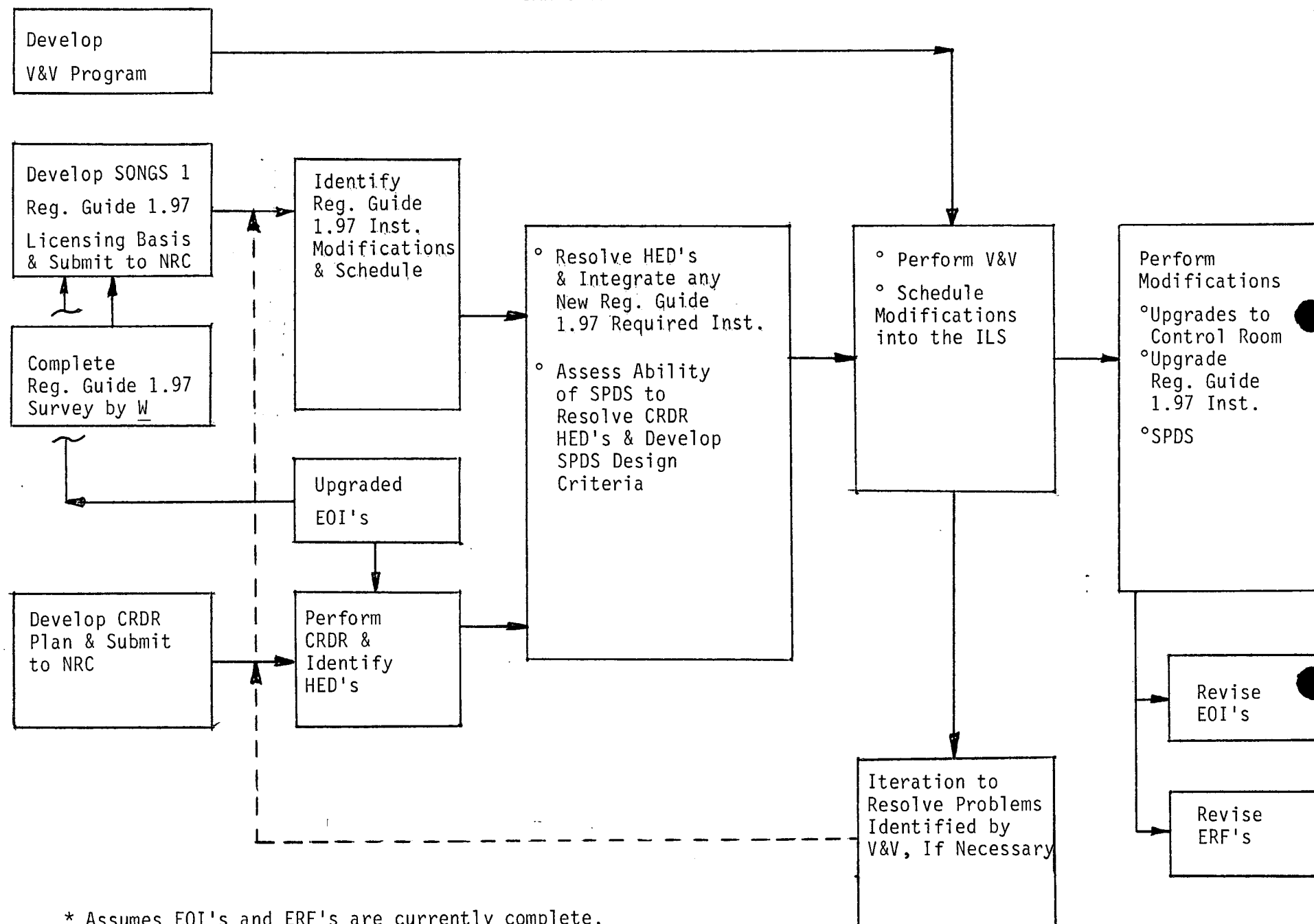
The integration of our efforts to respond to Supplement 1 is very important to assure the efficient use of our resources, the appropriate and adequate response to each initiative and to assure that the final implementation will enhance emergency response capability. The flow of Supplement 1 activities shown in Figure 1 represents our response to each of the initiatives and describes our integrated approach. The Verification and Validation (V&V) portion of our response will assure that any planned modifications accomplish the desired goal of emergency response capability enhancement.

The milestone schedule of events and transmittals is shown in Appendix 1. This schedule is based upon our current knowledge and understanding of the efforts required to complete this program plan. The development of the CRDR Program Plan and the Reg. Guide 1.97 response will give us greater insight to assess the feasibility of the remainder of the schedule. Therefore, when the CRDR Program Plan and the Reg. Guide 1.97 response are submitted, we will confirm or revise the remainder of the schedule. As stated in the introduction, any backfits that result from the Supplement 1 Program Plan for San Onofre Unit 1 will be incorporated into the ILS for backfits. However, it should be noted that based upon the schedule for evaluations as shown in Appendix 1 and the procurement lead time for the implementation of any backfits, it is expected that the backfits will be implemented during the Cycle XI or later refueling outages. This schedule for backfits is consistent with our previous ILS rankings where these backfits were included.

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SUPPLEMENT 1 PROGRAM PLAN *

SAN ONOFRE UNIT 1



* Assumes EOI's and ERF's are currently complete.

FIGURE 1

APPENDIX 1

Event	Date
*CRDR Program Plan Developed	December 16, 1985
*Reg. Guide 1.97 Response Developed	December 16, 1985
CRDR Review Phase Completed	July 25, 1986
o Operating Experience	
o Function & Task Analysis	
o Control Room Survey	
Resolve CRDR HED's	October 10, 1986
V&V Program Developed	October 10, 1986
SPDS Criteria Developed	October 10, 1986
V&V Completed	January 9, 1987
*SPDS Criteria Finalized	January 9, 1987
*CRDR Summary Report, with final Reg. Guide 1.97 and SPDS Upgrade plans, submitted to NRC with ILS Input for Backfits	May 1, 1987

*Denotes NRC Submittal Required by Supplement 1.

APPENDIX 2

REFERENCES

1. Letter, D. G. Eisenhut, NRC, to All Licensees of Operating Reactors, Supplement 1 to NUREG-0737 - Requirements for Emergency Response Capability (Generic Letter No. 82-33), December 17, 1982
2. Letter, R. W. Krieger, SCE, to D. G. Eisenhut, NRC, Supplement 1 to NUREG-0737, Requirements for Emergency Response Capability, April 21, 1983
3. Letter, J. H. Drake, SCE, to D. G. Eisenhut, NRC, Responses to NRC Requirements Related to the Three Mile Island Accident, October 17, 1979
4. Letter, K. P. Baskin, SCE, to D. G. Eisenhut, NRC, San Onofre Nuclear Generating Station, Units 1, 2 and 3, July 1, 1981
5. Letter, K. P. Baskin, SCE, to D. M. Crutchfield, NRC, Response to Order Conforming Commitments for TMI Related Requirements, August 6, 1981
6. Letter, K. P. Baskin, SCE, to D. M. Crutchfield, NRC, San Onofre Nuclear Generating Station, Unit 1, September 13, 1982
7. Letter, K. P. Baskin, SCE, to D. M. Crutchfield, NRC, Post-TMI Requirements, February 16, 1983
8. Letter, M. O. Medford, SCE, to J. A. Zwolinski, NRC, NUREG-0737, Item I.C.1 - Emergency Operating Procedures, April 12, 1985
9. Letter, K. P. Baskin, SCE, to D. G. Eisenhut, NRC, Additional Information in Support of Responses to NRC TMI Requirements, January 17, 1980
10. Letter, D. G. Eisenhut, NRC, to All Licensees of Operating Plants, Post-TMI Requirements for the Emergency Operations Facility (Generic Letter 81-10), February 18, 1981
11. Letter, K. P. Baskin, SCE, to D. M. Crutchfield, NRC, Emergency Response Facilities, December 7, 1982
12. Letter, K. P. Baskin, SCE, to H. R. Denton, NRC, Integrated Living Schedule, February 27, 1984