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October 2, 1989

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

Gentlemen:

Subject: **Docket No. 50-206**
Full Term Operating License Open Items (TAC No. 11232)
San Onofre Nuclear Generating Station
Unit 1

The following responds to a letter dated August 17, 1989, from Mr. Charles M. Trammell, Senior Project Manager, Project Directorate V, USNRC to the undersigned concerning the subject matter. An initial response was provided in my letter dated September 5, 1989, and Edison representatives have discussed the further response which is provided below in meetings with NRC staff on September 19 and 26, 1989.

BACKGROUND

As discussed in my September 5, 1989 letter, the principal factor influencing when the next refueling will occur is the need to inspect, and repair as necessary, the thermal shield in an outage beginning on June 30, 1990. Repair of the thermal shield requires fully defueling the reactor, and we have concluded that the next refueling should also occur at the same time.

With regard to repair of the thermal shield, since we must be prepared in all respects to perform the repair at the time of the inspection outage, and since satisfactory inspection without repair may not be practical, we have decided to proceed on the basis that the thermal shield will be repaired, and that the Cycle 11 refueling will occur, in an outage commencing June 30, 1990. This is approximately one year in advance of when the Cycle 11 refueling would otherwise have occurred in 1991. Therefore, please discontinue your review of the criteria for inspection of the thermal shield without repair which were submitted to you by letter dated September 11, 1989.

My September 5, 1989 letter indicated that we were considering the possibility of combining the thermal shield repair and the Cycle 11 refueling outage with a steam generator inspection outage which is currently required by March 5, 1990. However, we have determined that we cannot be prepared to perform the plant modifications which we consider required for Cycle 11 operation in time for a March 1990 outage.

Accordingly, in order to prevent shutdown of the unit for inspection of the steam generators in March, followed by a further lengthy shutdown commencing at the end of June, we intend to request NRC approval to perform the steam

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generator inspection during a combined outage commencing June 30, 1990. This request, and the associated technical justification for extension of the inspection interval, will be submitted by October 30, 1989.

DISCUSSION

Through discussion with the NRC staff, we have evolved a list of 39 items identified as "FTOL Projects." We believe these items include all issues that need to be resolved and completed in order to support proceeding with FTOL issuance. As such, the list is responsive to Mr. Trammell's letter of August 17, 1989 referenced above.

The list has been divided into 18 items which are to be resolved and completed prior to the unit entering service following the Cycle 11 refueling (Figure 1 attached) and 19 items which are to be resolved and completed prior to the unit entering service following the Cycle 12 refueling. Two items, HELBA and Seismic Adequacy of Equipment, will be resolved prior to the unit entering service following the Cycle 12 refueling; however, modifications, if extensive, will likely extend beyond Cycle 12 (Figure 2 attached). As a result of our decision to conduct the cycle 11 refueling and thermal shield repair during an outage commencing June 30, 1990, all 39 items will be resolved and completed approximately one year earlier than otherwise would have occurred. This is illustrated by the comparison of two schedules shown in Figure 3 attached.

The plant modifications included in the list of Cycle 11 items include those which Edison believes will provide the largest benefit to continued safe operations and which can be accomplished in the outage taking into account considerations such as procurement and engineering lead times. Based on the relatively short time remaining prior to the rescheduled Cycle 11 refueling, and the need to focus maximum attention on timely completion of the modifications selected for Cycle 11, the remaining plant modifications have been included in the list of Cycle 12 items.

Our bases for scheduling a number of plant modifications following completion of Cycle 11 are summarized in a further attachment to this letter. In a number of cases, additional details and justification for individual item schedules will be provided in separate submittals to the NRC, as indicated. Overall, the short nine month period remaining before the commencement of the Cycle 11 refueling will require our maximum efforts to ensure that the modifications designated for completion in that outage are accomplished.

In this regard, as discussed in my September 5, 1989 letter and in meetings on September 26, 1989, we have scheduled installation of the Reactor Vessel Water Level Instrumentation System (RVLIS) for Cycle 12 in order to permit the system to be developed and fully validated for its unique application to the unit. We will submit a request for License Amendment to reflect this schedule, along with an appropriate technical discussion and justification, by October 31, 1989.

Also, my September 5, 1989 letter indicated that the California Public Utilities Commission (CPUC) had authorized $200 million for modification of the unit during Cycles 9 through 11. Based on our most recent review of costs, we expect that this will be sufficient to complete the work shown in Figure 1 attached.

Edison will commence immediately to perform work in support of the modifications to be completed during the Cycle 12 outage. This work includes design and procurement activities associated with RVLIS and a plant reference simulator. It also will include development and submittal to the CPUC at the appropriate time of a request for authorization of as much as $100 million for the Cycle 12 modifications and additions.

CONCLUSION

The Cycle 11 refueling will commence in nine months, or approximately 1 year earlier than previously scheduled, as a result of our decision to repair the thermal shield at the time of the required inspection outage, June 30, 1990. In response to Mr. Trammell's letter dated August 17, 1989, we have identified 39 open items in connection with the FTOL and have scheduled approximately half for resolution and completion during each of the next two refueling outages. The modifications which will provide the largest benefit to continued safe operation have been scheduled for completion prior to Cycle 11 operation unless considerations such as procurement or engineering lead times preclude their implementation in this outage. Nineteen of the remaining 21 issues have been scheduled for completion prior to Cycle 12 operation. Modifications resulting from HELBA reanalysis and evaluation of Seismic Adequacy of Equipment, if extensive, will likely extend beyond Cycle 12 refueling.

We are proceeding in accordance with these schedules and additional information will be provided to the NRC concerning individual items as indicated. We will be pleased to discuss these items and schedules further with the NRC staff and to provide any additional information which may be required.

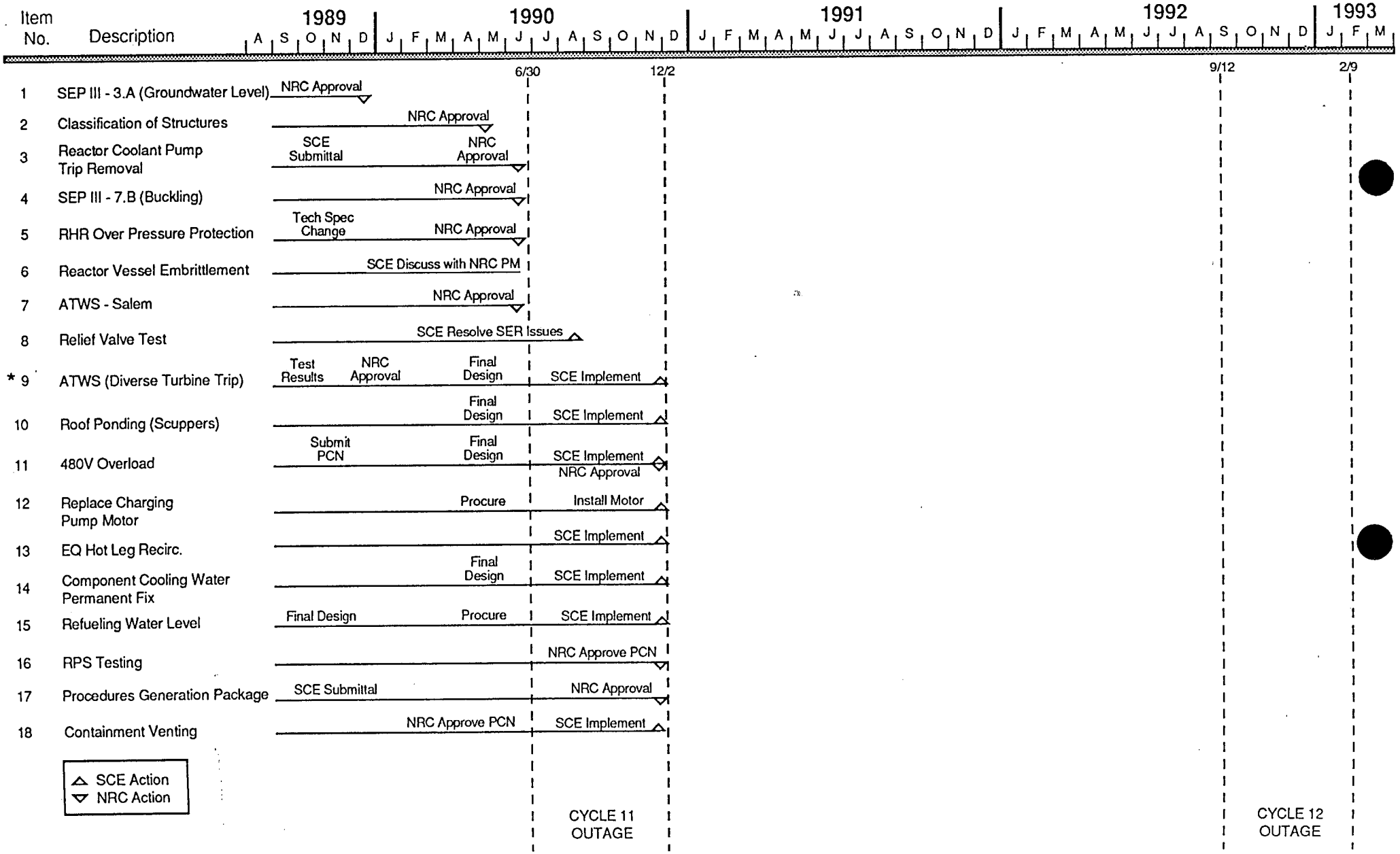
Very truly yours,

Harold B. Ray

Attachments

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

Figure 1
SONGS 1 Cycle 11 FTOL Projects



* Critical NRC action required

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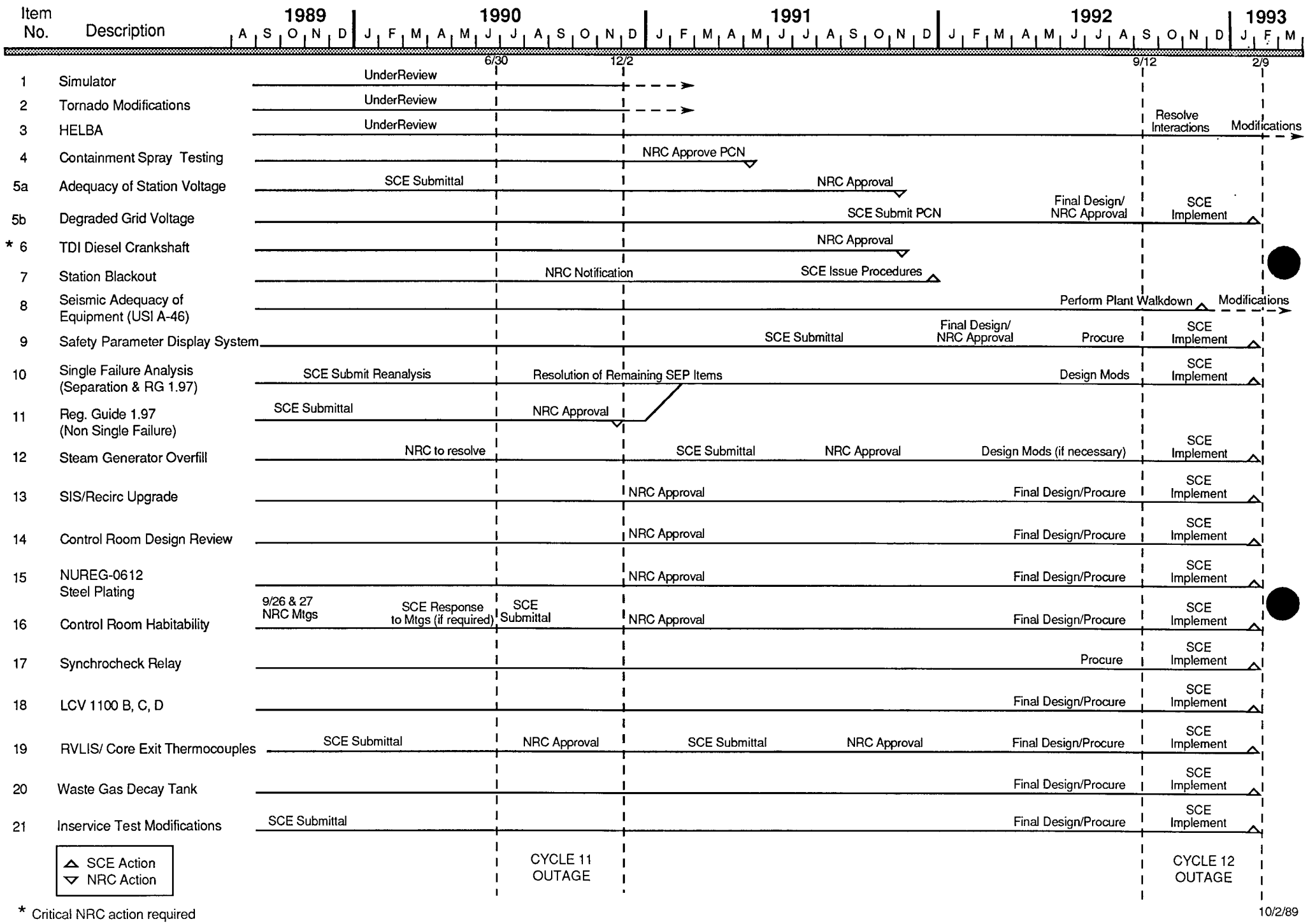
Figure 2
SONGS 1 Cycle 12 FTOL Projects



* Critical NRC action required

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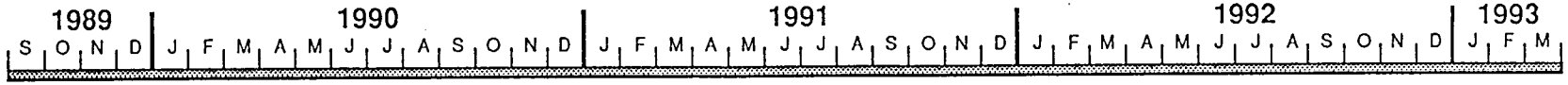
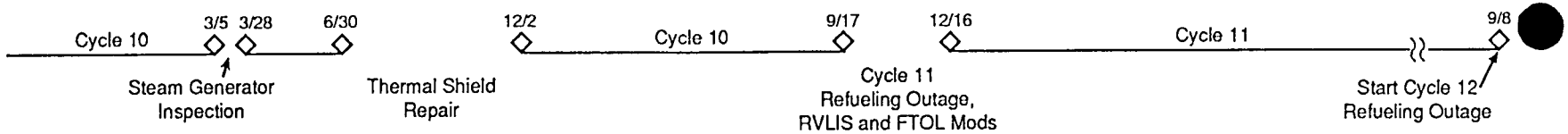
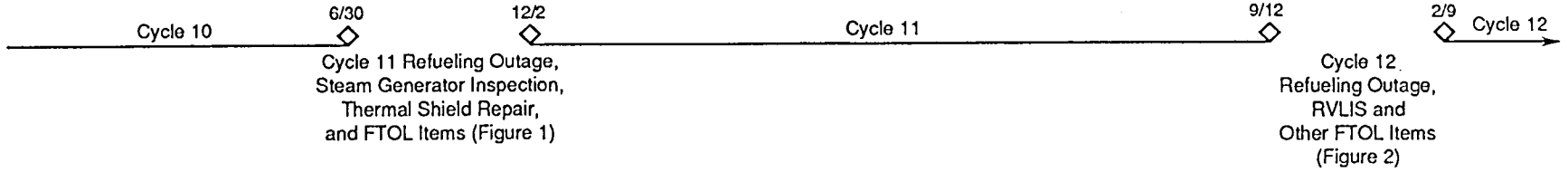
Figure 3
SONGS 1 Operation Schedule



Previously Planned Operation



June 30, 1990 Cycle 11



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Attachment

PROJECTS SCHEDULED FOR IMPLEMENTATION BEYOND CYCLE 11

Prior to return-to-service from the Cycle 11 refueling outage, significant progress will have been made on a large number of Full Term Operating License (FTOL) Projects. Current schedules indicate the following FTOL projects will be completed at that time:

- Anticipated Transients Without Scram Modifications (Diverse Turbine Trip)
- Roof Top Drainage Improvements
- Long Term Corrective Measures for 480V Overload Conditions
- Reactor Coolant Pump Trip Removal
- Replacement of Charging Pump Motor
- Environmental Qualification of the Hot Leg Recirculation System
- Long Term Corrective Measures for Component Cooling Water System
- Refueling Water Level Indication Improvements (GL 88-17)
- SEP Topic III-1, Classification of Structures, Systems and Components
- SEP Topic III-7.B, Load Combinations (Containment Bucking)
- Overpressure Mitigation System Technical Specifications
- SEP Topic VI-10.A, Reactor Protection System Testing Technical Specification Changes
- Procedures Generation Packages
- Safety Relief Valve Testing
- Containment Vent Technical Specification
- Reactor Vessel Embrittlement
- Anticipated Transients Without Scram (Salem Event)
- SEP III-3.A, Groundwater Level Evaluation

Scheduling Safety Significant Modifications

SCE schedules capital backfits using the Integrated Implementation Schedule (IIS) Program Plan. The use of this plan is required by License Condition 3.J, "Integrated Implementation Schedule." The program plan includes provisions for ranking projects using the Westinghouse Analytical Ranking Process (WARP) and normal scheduling techniques. The plan is contained in the NRC's Amendment issuing the license condition dated April 20, 1987. The WARP was approved by the NRC for use in determining project safety priority by letter dated November 16, 1983.

The IIS works by first ranking those projects with commitments for implementation using the WARP and then scheduling the highest priority projects first using normal scheduling techniques. Some projects were constrained by the time available to implement the project during the June 30, 1990 outage causing deferral to Cycle 12. However, other projects with shorter lead times were able to be moved into Cycle 11. The WARP is a method based on comparative evaluations of projects. It is able to use all of the available information on a given project. Once all projects are identified and all available relevant information is gathered, a group of experienced engineers (including input from plant operations personnel) discusses each project and compares it to selected other projects in the categories of accident prevention, accident mitigation, availability, reliability, operability, and maintainability. Based on these comparisons, a computer

program combines all of the individual comparisons and determines the overall rank of the projects. The ranking is heavily weighted in the categories of accident prevention and mitigation, but also allows consideration of the effects of a project on the other areas.

Projects are then scheduled using normal techniques and projects with high safety significance are given higher priority. Inputs considered include, resource constraints, engineering lead time, procurement lead time, etc. When the schedules are revised periodically, consideration is also given to the progress already made on a project and whether its deferment is prudent.

In addition to the IIS, we have completed risk studies on many of the committed plant modifications. We have determined the potential risk (e.g., impact on core melt frequency [CMF]) for these modifications. The results of our risk studies were considered in evaluating our schedule for the proposed modifications.

Using these methodologies, the following projects have been scheduled for implementation after Cycle 11. The schedule is based on a combination of their safety significance, resource/schedule constraints and time available to complete final engineering design and procurement.

Projects With Identified Hardware Changes

Project	Reason for Completion Beyond Cycle 11
Safety Injection System Improvements	SCE's submittal on this modification is currently under NRC review. This project is of lower safety significance than the June 30, 1990 Cycle 11 modifications. The complexity of this modification which will be implemented in conjunction with the Safety Injection System recirculation improvements described below does not allow time for completion of engineering design to support implementation in the Cycle 11 refueling outage.
Safety Injection Recirculation System Improvements	The decision to modify the RHR system to allow it to become a backup to the recirculation portion of the SIS was recently made. Insufficient time is available to complete engineering design and procurement to support installation during Cycle 11.

Project	Reason for Completion Beyond Cycle 11
NUREG-0612 (Steel Plating)	This project is of low safety significance (change in CMF of 5.08 E-8). This modification is designed to mitigate dropping of heavy loads for lifts that will seldom occur at SONGS 1. IIS allocation of resources determined that this work should be completed after Cycle 11.
Control Room Habitability	The SCE submittal on this issue is currently under NRC review. The time required to resolve action items from the September 26, 1989 Meeting, and design of any required modifications take this issue beyond Cycle 11.
Addition of Synchrocheck Relays to Emergency Diesel Generators	This project has low safety significance (change in CMF of 4.5 E-7). The IIS allocation of resources determined that this project should be completed after Cycle 11.
Controls Modifications to LCV 1100 B,C,D	This project has low safety significance (no impact on CMF). The IIS allocation of resources determined that this project should be completed after Cycle 11.
RVLIS	The NRC only recently required that this modification be completed in Cycle 11. Insufficient time is available to complete engineering design, proof of concept and procurement for implementation during the Cycle 11 refueling outage because this design is a new application of the CE heated junction thermocouple which has not been implemented at any other plant.
Core Exit Thermo-couples (CETs)	This modification was scheduled for Cycle 11 but since the CET installation requires work being done in the same location in the reactor vessel as RVLIS, installation has been rescheduled to be implemented along with RVLIS in Cycle 12 to limit radiation exposure to personnel and increase installation efficiencies.

Project	Reason for Completion Beyond Cycle 11
Simulator	The simulator is not needed to retrain operators until after Cycle 11. SCE's evaluation of all options available to comply with the simulator rule resulted in the decision to install a plant specific reference simulator. Our present expectation is that we will implement a plant reference simulator in mid 1992 unless unforseen circumstances show this to be impractical or unfeasible (e.g., CRDR results may change the control room such that it impacts the schedule for completing the simulator design). This will be the subject of separate future correspondence.
Safety Parameter Display System	This system is of low safety significance (change in CMF of 3.4 E-6) because it only provides enhancements to existing post accident monitoring capability. All indications on the SPDS can be obtained from other indicators already present in the control room. Engineering resources required to support this design are being utilized on other higher safety significant issues. Thus, we will be unable to support implementation in Cycle 11.
Degraded Grid Voltage	This project has low safety significance (change in CMF of 1.4 E-8) and IIS allocation of resources determined that it should be scheduled after Cycle 11.
Waste Gas Decay Tank	This project has low safety significance (no impact on CMF) and IIS allocation of resources determined that it should be scheduled after Cycle 11.
CRDR	The last edition of the IIS indicated that these modifications would be completed post Cycle 11. NRC approval is required before modification designs can be finalized. Therefore, the earliest implementation date for these modifications would be in Cycle 12.
Inservice Test Modifications	This project has low safety significance (change in CMF of 1.2 E-6) and IIS allocation of resources determined that it should be scheduled after Cycle 11.

Projects Involving Ongoing Analyses

Some projects which involve ongoing analyses will not be able to be completed prior to return-to-service for the Cycle 11 refueling outage. These projects and a summary of their reason for completion beyond the Cycle 11 refueling outage are listed below:

Project	Reason for Completion Beyond Cycle 11
Tornado Improvements	This project is of low safety significance (change in CMF of 4.5 E-7) and will be the subject of future SCE correspondence with the NRC. SCE plans to perform an analysis demonstrating that these modifications are not required and obtain NRC agreement to withdraw this commitment.
High Energy Line Break Analysis	This issue is under NRC review. SCE is requesting that the NRC halt their review of this issue since we will be proposing new criteria and methodology for resolution of this issue. Our current schedule for developing the new criteria and subsequent NRC review will result in a post Cycle 11 resolution. Modifications, if extensive, will likely occur post Cycle 12.
Single Failure Reanalysis and Resolution of Regulatory Guide 1.97 Items	SCE is proceeding to reperform the single failure analysis (SFA) originally done in 1977. This reanalysis will take several months to complete. The results of the SFA will then be input to the Regulatory Guide 1.97 work and resolution of electrical system separation concerns which will again require several months of analysis. This will carry the projects beyond the Cycle 11 refueling outage.
Containment Spray and RPS Testing Technical Specifications	These technical specification changes are under NRC review. Resolution of issues following NRC review may result in implementation post Cycle 11.
Steam Generator Overfill	This issue is to be resolved as part of unresolved safety issue (USI) A-17, "Systems Interactions in Nuclear Power Plants" (Generic Letter 89-18). USI A-17 was only recently resolved (September 6, 1989). The time required to determine the impact on SONGS 1 of the USI resolution results in this issue being resolved post Cycle 11.

Project	Reason for Completion Beyond Cycle 11
TDI Issues	The TDI issue remains an open item under NRC review. The schedule for resolution is unknown at this time so it is included as a post Cycle 11 item.
Adequacy of Station Voltage Distribution	This issue is under NRC review. The SCE submittal on this subject is now out of date due to plant modifications completed after its submittal, and will be further impacted by Cycle 11 mods. SCE will provide updated information for NRC review and approval and it is expected that this issue will be resolved post Cycle 11.
Seismic Adequacy of Equipment (USI A-46)	This is an open NRC issue (GL 87-02). Criteria development continues for this project. Final agreement on criteria and performance of walkdowns is expected to take the project beyond Cycle 11. We forecast that modifications, if extensive, could extend beyond Cycle 12.
Station Blackout	SCE's submittal on this project is under NRC review. Consistent with the station blackout rule, the schedule for this project extends beyond Cycle 11.

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