



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 98 TO PROVISIONAL OPERATING LICENSE NO. DPR-13
SOUTHERN CALIFORNIA EDISON COMPANY AND
SAN DIEGO GAS AND ELECTRIC COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 1
DOCKET NO. 50-206

1.0 INTRODUCTION

By letter dated February 27, 1984, Southern California Edison Company, et al. (SCE) (the licensees) submitted for NRC review its Integrated Implementation Schedule Proposal for modifications of the San Onofre Nuclear Generating Station, Unit 1 (SONGS-1). Subsequently, the licensee requested in a May 23, 1984 license amendment application that a condition be added to the San Onofre 1 operating license requiring SCE to follow the "Integrated Implementation Schedule." This submittal included a description of the approach to be used for integrated scheduling.

Upon review of the licensees' May 23, 1984 submittal, the NRC staff requested certain revisions to the licensees' application to be consistent with the integrated implementation schedule programs already established with licensees of other facilities. Consequently, on August 29, 1985 the licensees submitted a revised application for amendment which contained the associated schedules for issue resolution.

Subsequently, on March 26, 1986, October 14, 1986, and March 23, 1987 the licensees submitted updated schedules for individual issue resolution that were established in accordance with the methodology contained in the licensees' previous applications. During the staff's review of this program certain minor modifications were found to be necessary. These changes were discussed in detail with the licensees' representative and were mutually acceptable. The changes are described further in Section 3.0 below.

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The program described in the above applications was developed by SCE to coordinate and schedule all significant work activities at San Onofre 1 whether mandated by NRC or identified by SCE. The program integrates all presently planned work at San Onofre 1 to enable effective scheduling and coordination of individual tasks.

The "Integrated Implementation Schedule Program Plan-San Onofre Nuclear Generating Station, Unit 1" (Attachment 1 to this evaluation) (the Plan) is the implementation vehicle for the licensees' program. The Plan describes how the program functions, the mechanisms for changing and updating it, and the interaction of the NRC and SCE under the provisions of the Plan and its associated schedules.

2.0 PROGRAM DESCRIPTION

The program developed by SCE includes capital modifications currently identified for implementation. The projects are ranked according to their relative potential to enhance safe plant operation. Ranking of projects is performed by two different methodologies; NRC and other regulatory-related modifications are ranked by the Westinghouse Analytical Ranking Process as Applied to SONGS Unit 1 and the SCE-initiated plant betterment items are ranked by the San Onofre change committee. The Westinghouse method was previously evaluated by the NRC and was found to be acceptable by letter dated November 16, 1983 from D. Eisenhut (NRC) to K. Baskin (SCE). The San Onofre change committee consists of representatives from all areas of plant operation and management who determine priority and schedules for betterment projects. Thus, special consideration is given to the particular attributes of a project that may make it imperative to implement on an expedited schedule.

Once ranked the projects are scheduled assuming an outage duration of three months. The scheduling also considers lead times, site manpower, engineering support and other resources. Because many of the modifications can only be completed during plant shutdown, completion schedules are usually cycle (or outage) dependent instead of keyed to a fixed calendar date.

The program is structured so that future plant modifications that might be identified can be integrated into the overall program to determine the impact of new requirements on the overall schedule. The plan submitted by the licensees identifies three categories of modifications. Schedule A identifies schedules for modifications established by existing rule, license condition, or order. Schedule B identifies schedules for completion of regulatory items (of either a generic or plant specific nature) identified by NRC or other regulatory agencies and those items perceived by SCE as being prospective NRC requirements, all which would result in plant modifications. Schedule B also includes major technical evaluation projects to identify any required modifications to satisfy NRC requests. Schedule C consists of SCE-initiated plant betterment projects.

3.0 EVALUATION

3.1 Implementation

The licensees' May 23, 1984 submittal, as revised on August 29, 1985, provides an application for amendment to incorporate a license condition requiring that SCE follow the plan but permits the licensees to make changes to the plan and its schedules for certain categories of items in accordance with the provisions of the plan. The staff has reviewed the licensees' plan and has determined that:

- (1) Changes to schedules for completion of modifications imposed by rule, license condition, or order (Schedule A completion dates) will continue to be sought through the exemption, license amendment, or order-date extension process.
- (2) Schedules for completion of other regulatory-related modifications (Schedule B) are identified and provisions are made in the plan to require SCE to provide the NRC with prior written notification of changes to Schedule B completion dates to enable further explanation or discussion of such changes.
- (3) Provisions are made in the plan for incorporating new or anticipated regulatory items into either Schedule A or B as these requirements are identified by NRC and/or formalized by rule, license condition, or order.
- (4) Schedules for completion of SCE-initiated projects (Schedule C) may be changed at the discretion of SCE.

Semi-annual status reports of utility progress toward implementation of NRC-identified modifications are required by the plan.

The incorporation of a condition into the San Onofre 1 operating license which requires SCE to follow the Plan provides an appropriate mechanism to assure that NRC is informed as to whether required safety modifications are performed in a timely manner. At the same time, the plan provides a suitable mechanism for changes to completion dates (due to unforeseen circumstances), for modifications not imposed by rule, license condition or order and for keeping the NRC informed of such changes for its consideration. Thus, the degree of flexibility needed to assure effective program implementation is provided while at the same time assuring that NRC's responsibilities are not compromised.

The Plan and the associated license condition are similar to those approved by the staff in Amendment No. 91 to the Duane Arnold Energy Center operating license. A copy of the Duane Arnold amendment was transmitted to all power reactor licensees by Generic Letter 83-20 on May 9, 1983. During subsequent NRC reviews, such as for Amendment No. 75 to the operating license for the Pilgrim Nuclear Power Station (July 13, 1984), and Amendment No. 82 to the license of Big Rock Point (February 12, 1986),

the staff identified some changes for clarity in sections of the plan dealing with changes to schedules. In addition, these recent integrated schedule amendments do not have expiration dates. SCE's revised submittal of August 29, 1985 incorporated changes to simplify the wording of the license condition and to remove the expiration date which had originally been included in the May 23, 1984 application. The staff finds that these changes are acceptable since they make the license condition similar to those previously approved by NRC.

However, the licensees' August 29, 1985 submittal also modified the plan and the license condition implementing the plan so that possible future revisions to the plan would still require NRC approval, but not in the form of a license amendment. The NRC staff review of this change found it to be a deviation from current NRC practice on integrated schedules. In discussions with the licensees, it was mutually agreed that the change would not be incorporated in the Plan issued by this license amendment. In addition, the staff has made other minor administrative changes to the wording in the licensees' proposed plan to eliminate areas of possible ambiguity. For example, the licensees' proposed plan often referred to plant modifications as "backfits"; this term has been removed to eliminate possible confusion with "backfitting" as defined in 10 CFR Part 50.109. In addition, the staff has revised the wording in the portion of the plan regarding changes to schedules to make that section of the enclosed Plan more similar to integrated schedule plans approved for other licensees. The licensees' representative has been informed of and is in agreement with these changes. These changes do not affect the substance of the amendment as noticed in the Federal Register.

Thus, the staff finds that (1) the Plan is equivalent to previously approved plans for implementation of integrated scheduling programs, and (2) the license condition implementing the plan is equivalent to previously approved license conditions on this subject.

3.2 Proposed Schedules

Attachments 2 through 4 provide SCE's proposed schedules for completion of all presently known SCE-planned and NRC-required modifications over the next two refueling outages except for two issues which are described in detail below. It is expected that these schedules may continue to change after the evaluations identified for completion prior to the end of the Cycle 10 refueling outage are completed and any needed modifications are defined.

With respect to NUREG-0737, Supplement 1 items, the attached schedules provide for completion of necessary reports, plans, and analyses to identify necessary plant modifications to meet these requirements.

The October 14, 1986 SCE submittal stated that two plant modifications previously committed to by the licensees were no longer included in Schedule B for implementation at San Onofre 1. Modifications to provide (1) a second immediate access source of offsite power and (2) a dedicated feedwater system (thus allowing the existing feedwater system to be dedicated to the safety-injection function) were no longer included in the schedules due to unacceptable results obtained from recent licensees cost-benefit analyses. The NRC responded to these changes by letter dated November 5, 1986, T. Novak (NRC) to K. Baskin (SCE), which stated that staff review of the acceptability of these new positions was required and had been initiated. A detailed submittal regarding the safety injection system was provided by SCE on December 22, 1986. The staff review of these two issues has not been completed.

Thus the staff concludes that except for the two issues described above, the licensees' proposed schedules for completion of modifications are acceptable. The staff review of the exceptions is ongoing. If the NRC determines that the modifications are required, the licensees will be requested to incorporate them in the next six-month schedular update for implementation in accordance with the integrated schedule plan.

4.0 SUMMARY

Based on the above considerations, the staff finds that:

- (1) The proposal by Southern California Edison, et al. that its plan (modified as discussed in Section 3.0) be implemented by a license condition requiring the utility to follow the plan is acceptable.
- (2) The licensee's proposal that changes to implementation dates imposed by existing rule, license condition, or order will continue to be sought through the exemption or order date extension process is acceptable.
- (3) Schedules for new requirements should be established on a plant-specific basis.
- (4) The completion dates proposed by the licensees appear reasonable.
- (5) The license condition and the plan submitted by Southern California Edison, et al. modified as discussed in Section 3.0, are equivalent to those already approved by the NRC for other licensees.

5.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). This amendment also involves changes in recordkeeping, reporting or administrative procedures or requirements. Accordingly, with respect to these items, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

6.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

7.0 ACKNOWLEDGEMENT

Principal Contributors: E. McKenna and R. Dudley.

Dated: April 20, 1987

Attachments:

1. Integrated Implementation Schedule Program Plan
2. Schedule A
3. Schedule B
4. Schedule C

INTEGRATED IMPLEMENTATION SCHEDULE PROGRAM PLAN
SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 1

I. INTRODUCTION

This document provides the methodology to be used in determining the implementation schedules of capital projects at San Onofre Unit 1 in accordance with the provisions of License Condition 3.J.

The program has as its goal the implementation of capital modifications in a stable, controlled manner with the implementation of projects with the greatest potential for enhancing the safe operation of the unit generally given highest priority. The projects of regulatory origin will be ranked using the Westinghouse Analytical Ranking Process to specifically determine the relative potential safety contribution of each modification. The safety ranking will then be used as a primary criterion in scheduling the project. For betterment projects the priority and schedule will be determined by the San Onofre change committee. The committee consists of management representatives involved in many areas of plant operation and is the most effective means of determining implementation schedules for those projects necessary for continued or improved plant operation, maintenance, etc.

The program reflects limited outage time and financial and manpower resources, while at the same time implementing those modifications deemed necessary for enhanced plant safety. The plan provides for integration of all future identified work into one comprehensive schedule and has built-in mechanisms for changes to the schedule when new modifications are identified or when key program milestones cannot be achieved due to considerations beyond the control of SCE.

II. SUMMARY OF PRIORITY DETERMINATION

The Integrated Implementation Schedule is based on a priority determination to assist in maximizing the benefit derived from modifications. Since it is not always possible or beneficial to try to implement a large number of modifications in a single outage, the integrated schedule provides a mechanism for focusing attention on those projects of highest priority.

Regulatory related projects are ranked using the Westinghouse Analytical Ranking Process. This process was approved by the NRC in their letter from D. G. Eisenhut, NRC, to K. P. Baskin, SCE, dated November 16, 1983. A description of the Westinghouse process was submitted to the NRC by letter dated September 2, 1983 from Kenneth P. Baskin to H. R. Denton.

Betterment projects do not always have a major direct safety impact and vary in their effect on operation, maintenance, ALARA, reliability, availability, etc. These projects also vary in magnitude from those requiring a small expenditure of resources to those requiring substantial resources and outage time. In many instances, the implementation of a

betterment project may be necessary on an expedited schedule due to an anticipated negative impact on plant operation. Due to these and other factors, the betterment projects have their priority and schedule determined by the San Onofre change committee. The committee is incorporated into the review cycle for approval of plant modifications by San Onofre Procedure S0123-XIX-3.0. This committee consists of representatives from areas of plant operation and management. In this way, special consideration is given to particular attributes of a betterment project that may make it imperative to implement on an expedited schedule.

III. SCHEDULING

Once projects are ranked they are then evaluated using normal scheduling methods to determine how long they will take to implement. The projects ranked highest are first evaluated to determine whether they can be implemented during the next scheduled refueling outage. Projects continue to be selected from the top of the ranked lists and scheduled for the earliest outage in which implementation constraints of a three month outage have not been exceeded. These schedules are then separated into three lists as described below:

Schedule A

All items which have implementation dates required by NRC rules, orders or license conditions.

Schedule B

Regulatory items (of either a generic or plant specific nature) identified by NRC which have implementation dates committed to by SCE and which would result in either (a) plant modifications, (b) procedure revisions, or (c) changes in facility staffing requirements; or items perceived by SCE as prospective NRC requirements; or major tasks resulting from mandates of agencies other than NRC. Also included are evaluations for major NRC-initiated issues not required by regulation, license conditions or orders.

Schedule C

Southern California Edison initiated plant betterment projects.

Schedule A dates may be modified only with prior NRC approval in accordance with existing NRC procedures. Changes in Schedule B dates require written notification to the NRC as described in Section V below. Schedule C dates are provided as information to allow the NRC to gain perspective on the scope of overall modifications and may be changed at SCE discretion. Schedules A, B, and C taken together provide the basis for assessing the overall effect of changes to schedules and serve as a departure point for discussion between the NRC and SCE regarding such changes, as discussed below.

IV. SCHEDULE MODIFICATIONS

An important aspect of SCE's planning effort is the recognition that the schedules will need to be modified at times to reflect changes in regulatory requirements, to accommodate those activities that SCE finds necessary to improve plant efficiency and reliability, and to take into account delays resulting from events beyond SCE's control. It is important that the procedure used by SCE for changing the schedules be documented. */ In addition, the NRC must play a role in the oversight of the scheduling process (and must, in fact, judge the acceptability of proposed date changes in Schedule A). Accordingly, it is important that the NRC's role and the interaction between the NRC and SCE be clearly defined, as discussed below.

V. SOUTHERN CALIFORNIA EDISON COMPANY RESPONSIBILITIES

The Integrated Implementation Schedule requires that SCE monitor the progress of the work undertaken, manage its activities to maintain the schedule, and act promptly to take necessary actions when a schedule change is needed.

A. Periodic Updating

Southern California Edison will update Schedules A, B and C semi-annually and submit the revised schedules to the NRC beginning six months following NRC approval of the Plan. In addition to updating the schedules, SCE will:

- o Summarize progress in implementing NRC requirements concerning plant modifications.
- o Identify changes since the last report.
- o Summarize the reasons for schedule changes associated with Schedules A and B.
- o Indicate the expected percentage allocation of resources on Regulatory and Betterment projects for the next refueling/modification outage.

B. Changes to Schedules

Changes to the schedules may arise from a variety of reasons, such as new work activities; modifications to the scope of scheduled work; problems in delivery, procurement, etc.; changes in NRC rules and regulations; or other NRC or SCE actions.

*/ Schedules A, B and C will contain sufficient detail to identify those modifications with completion dates keyed to fuel cycle outages. The schedules may also contain specific dates (either calendar date or keyed to some other milestone) for major evaluations.

Where it is necessary to add a new work item or to change the schedule for an item, the following general guidance will be utilized to the extent appropriate:

- o Determine the priority of the project, or changed priority, using the Westinghouse Analytical Ranking Process.
- o Schedule the new or changed item to avoid rescheduling other items already well underway, if it can be reasonably achieved.
- o Alter Schedule B and C items before Schedule A items.
- o Select a schedule for the new or changed item which will help maintain an optimum integrated program of work.

If a new Schedule A item is added, regardless of the results of the above ranking/scheduling process, the implementation schedule of the new item shall comply with applicable NRC regulations, orders, or license conditions unless a different schedule has been formally established in accordance with appropriate Commission procedures.

As noted above, no changes will be made to Schedule A without prior NRC approval. Should a change become necessary, it will only be proposed after SCE has determined that rescheduling of lower priority work either will not significantly assist in maintaining Schedule A without change, or that the safety, cost or schedule penalties from rescheduling lower priority work significantly outweigh the change in a Schedule A completion date.

SCE will inform the NRC Project Manager when serious consideration is given to requesting a change in Schedule A. When SCE determines that a change in Schedule A is necessary, it will submit a written request for NRC approval in accordance with applicable procedures.

SCE will notify NRC in writing a least 30 days before adopting a planned delay for an item in Schedule B. Such notification will also include the reasons for the delay and describe any compensatory actions indicated.

The revised date proposed by SCE will go into effect unless NRC, in writing, requests further explanation or discussion concerning such change. If NRC makes such a request, it will be made within 15 days of receipt of SCE's written notification. In this event, discussions will be initiated to promptly develop a schedule date which is mutually acceptable to SCE and the NRC Project Manager while considering overall program impact. The written notification by NRC will serve to extend the schedule date for the period of time required for such discussions. If a new date is established in these discussions such date will supersede the date set forth in Schedule B. The new date will be incorporated in a revised Schedule B in the next semi-annual schedule update submitted to NRC. If a new date cannot be established in these discussions, SCE changes in scheduled dates will be effective unless subsequently modified by NRC Order.

In the event of unplanned delays or circumstances beyond SCE control, SCE shall promptly notify the NRC Project Manager of the new date and incorporate it in a revised Schedule B in the next update submitted to NRC.

Work items in Schedule C may be rescheduled or work items may be added to Schedule C by SCE without NRC notification. SCE will report changes to Schedule C items in its semi-annual update to be provided in accordance with Section V.A above. This schedule is provided for information purposes only and is intended to give the NRC a better understanding of the unit's overall modification program.

VI. NRC REVIEW

As pointed out in Section V.B above, changes to the schedules are inevitable. Actions required by the NRC are discussed below:

A. Southern California Edison Originated Changes

1. Upon receipt from SCE of a request for modification of Schedule A, NRC will act promptly (consistent with resource availability and priority of other work) to act on the request in accordance with applicable procedures.
2. If the request for a modification of Schedule A is denied, the NRC shall promptly inform SCE and provide the reasons for denial.
3. NRC consideration of SCE changes in non-Schedule A items is covered by V.B above.

B. NRC Originated Changes (Schedule A)

It is recognized that formal NRC regulatory actions may: (1) impose a new regulatory requirement with a fixed date or (2) establish a firm date for a previously identified regulatory requirement. In taking any such action, the NRC, to the extent consistent with its overall regulatory responsibilities and, unless public health, safety, or interest require otherwise, will take into account the impact of such action on SCE's ability to complete effectively the items on Schedules A, B and C, and, in consultation with SCE, will try to minimize such impact. Although any formal regulatory action taken by the NRC will be effective in accordance with its terms without inclusion in Schedule A, the NRC and SCE recognize the desirability of incorporating such action into Schedule A, particularly in order to incorporate at the same time any other appropriate changes in the total integrated schedule program. Accordingly, once such formal regulatory action is taken (or earlier, if practicable), the NRC will provide SCE a reasonable opportunity to propose overall changes in the total integrated schedule program which would most effectively accommodate such requirements. Any resulting changes in items in Schedule A will be submitted to the NRC for review in accordance with established procedures, and, if approved by the Commission, will thereupon be reflected in a revised Schedule A submitted by SCE. SCE will inform the NRC of any resulting changes in Schedule B in accordance with Section V. above.

C. New NRC Issues (Schedule B)

The NRC may, from time to time, identify new regulatory issues which may result in (a) plant modifications, (b) procedure revision or development, or (c) changes in facility staffing requirements. For issues on which NRC requests scheduling information, these issues may be included in Schedule B in accordance with the date commitment developed in discussions between SCE and the NRC staff. As for the case of NRC-originated changes to Schedule A items, the NRC will provide SCE a reasonable opportunity to propose overall changes in the total integrated schedule program which would most effectively accommodate such issues. Any resulting changes in integrated program schedules will thereupon be reflected in a revised Schedule B submitted by SCE.

VII. Modifications to the Plan

The licensees and the NRC recognize that the Plan itself may require future modifications. Accordingly, SCE will draft proposed modifications and submit a license amendment application for approval of the proposed changes. The changes will be made effective upon amendment issuance by the NRC.

ILS SCHEDULE A
(RULE, REGULATION OR ORDER)

CYCLE X

ANTICIPATED TRANSIENTS WITHOUT SCRAM
DIVERSE TURBINE TRIP

CYCLE XI

NONE

EVALUATION

FSA UPDATE

DECEMBER 30, 1988

ILS SCHEDULE B
(NRC COMMITMENTS AND OTHER REQUIREMENTS)

CYCLE X

AUTOMATION OF THIRD AUXILIARY FEEDWATER PUMP
REGULATED INSTRUMENT BUSES INDICATING LIGHTS
ON-SITE TOXIC GAS SOURCES MODIFICATIONS
IN-SERVICE TESTING DIFFERENTIAL PRESSURE INDICATORS
MAGNACRAFT RELAY REPLACEMENTS
AUTOMATIC VENT SYSTEM FOR BORIC ACID SYSTEM
REACTOR CAVITY SAFETY CAGE (OSHA)
CONTROL ROOM HVAC DUCT HEATERS
VITAL BUS 4 UNINTERRUPTIBLE POWER SUPPLY

CYCLE XI

UPGRADE OF CORE EXIT THERMOCOUPLES FOR DETECTION OF
INADEQUATE CORE COOLING
CONTROL ROOM AND TECHNICAL SUPPORT CENTER HVAC UPGRADES
CVCS VALVES MOV-LCV-1100 B, C, D CONTROLS MODIFICATIONS
WASTE GAS DECAY TANK MONITORING INSTRUMENTATION
STEEL DECKING UNDER TURBINE BUILDING NORTH EXTENSION
UNDervOLTAGE RELAYS FOR PROTECTION FROM DEGRADED GRID
VOLTAGE
AUTOMATIC TERMINATION OF SAFETY INJECTION PUMPS ON LOW
RWST LEVEL
REMOVAL OF AUTOMATIC REACTOR COOLANT PUMP TRIP ON SAFETY
INJECTION
ADDITION OF SYNCROCHECK RELAYS TO EMERGENCY DIESEL
GENERATORS

EVALUATION

CONTROL ROOM DESIGN REVIEW

AUGUST 14, 1987

ILS SCHEDULE C
(BETTERMENT PROJECTS)

CYCLE X

NUCLEAR INSTRUMENTATION SYSTEM REPLACEMENT
TURBINE VIBRATION DETECTION INSTRUMENTATION
MASONILIAN ISOLATION VALVE UPGRADES
RADIATION MONITOR SV-99 UPGRADE

CYCLE XI

CONTROL ROOM INSTRUMENT RACKS REPLACEMENT