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

November 6, 1989

Docket No. 50-206

Mr. Harold B. Ray
Vice President
Southern California Edison Company
Irvine Operations Center
23 Parker
Irvine, California 92718

Dear Mr. Ray:

SUBJECT: INTAKE STRUCTURE REPAIR, SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 1 (TAC NO. 74168)

References:

1. LER No. 84-008 dated September 5, 1984
2. SCE Letter dated October 18, 1984, Subject: Intake Structure Degradation and Repair.
3. NRC Letter dated April 24, 1985, Subject: Intake Structure Corrosion and Repair
4. NRC Letter dated July 11, 1986, Subject: Long-Term Service Seismic Reevaluation Program
5. Second Surveillance Report for SONGS Unit 1 Intake Structure (Cycle X Refueling Outage) dated March, 1989

References 1 and 2 provided information relative to degradation of the Unit 1 intake structure. This matter was reviewed by the NRC staff as documented in References 3 and 4 and resolution of the condition by Southern California Edison Company (SCE) was judged to be acceptable. During your most recent surveillance of the Unit 1 intake structure (Reference 5), additional degradation was identified. Due to the continuing nature of intake structure degradation, the NRC staff is reviewing the current status and adequacy of intake structure repair. We have determined that the information identified in the enclosure is required to facilitate our review. Please provide your response within 90 days of your receipt of this letter.

Following receipt of your response, we plan to meet with you at the site for an in-depth discussion of this matter.

OFO1
1/1

ANA-4

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under Pub. L. 96-511.

Please contact us if you should have any questions regarding this request.

Sincerely,

Charles M. Trammell

Charles M. Trammell, Senior Project Manager
Project Directorate V
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosure:
Request for Additional Information

cc: w/enclosure
See next page

Mr. Harold B. Ray
Southern California Edison Company

San Onofre Nuclear Generating
Station, Unit No. 1

cc
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Chief Environmental Management
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Mr. F. B. Marsh, Project Manager
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Terminal Annex
Los Angeles, California 90060

ENCLOSURE

RAI ON REPAIR OF DEGRADATION OF INTAKE STRUCTURE AT SONGS-1

1. It is quite obvious from the reports (references 2,3) of the first and second surveillances that the rebar corrosion is a continuing process which does not seem to slow down. In spite of the installed modifications, the chloride penetration is going to keep on increasing (though no such observations are made during the surveillances). Provide justification to show that the presently implemented patch-work modifications are sufficient to ensure the integrity of the structure through the remaining plant-life.

2. The core samples taken to measure chloride content in 1984 appeared to indicate low (300 ppm) chloride levels on the back-fill side of the walls (ref. 1). However, that chloride level may not reflect the conditions below the ground water level and underneath the base slabs. Provide information on methods of assessing the conditions of concrete in these inaccessible areas.

3. Some reinforced concrete walls (DCP attached to ref. 3) have been considered to be able to withstand the postulated load combinations if their unreinforced (excluding 3" loss due to degradation) moment capacities have been shown larger than the maximum moments due to the postulated load combinations. Provide computations showing the calculations of resisting moment capacity (Mt). Provide information on how the postulated seismic loadings were calculated. It is anticipated that wide-spread degradation will change the model characteristics; and the seismic responses could be quite different. Provide information on how the potential changes in responses were incorporated in arriving at the applied loads.

4. Provide information similar to that requested in "3" above for the plated reinforced concrete walls. Was there any testing performed to understand the behavior of installed modifications (including plate action, composite action, bolt deformation and grout performance)? If yes, provide information on the results of such tests. If no, provide assumptions used in the assessment of the composite behavior considering the potential degradation of concrete between the plates.

5. Provide cross-sectional details of sections (1-1 to 8-8) shown on the attached sketch (Attachment 1) indicating grade levels, water levels (normal and fluctuations), wall and slab thicknesses, beam dimensions, reinforcing provided, major embedments in concrete, and pump support locations. Also, indicate ground water fluctuations in the backfill, and foundation strata below the base slabs and around the tunnel.

6. We are concerned about the overall integrity of the structure to perform its safety function for the remaining plant-life. Provide information on other corrective measures that could be implemented to preserve the integrity of the structure.

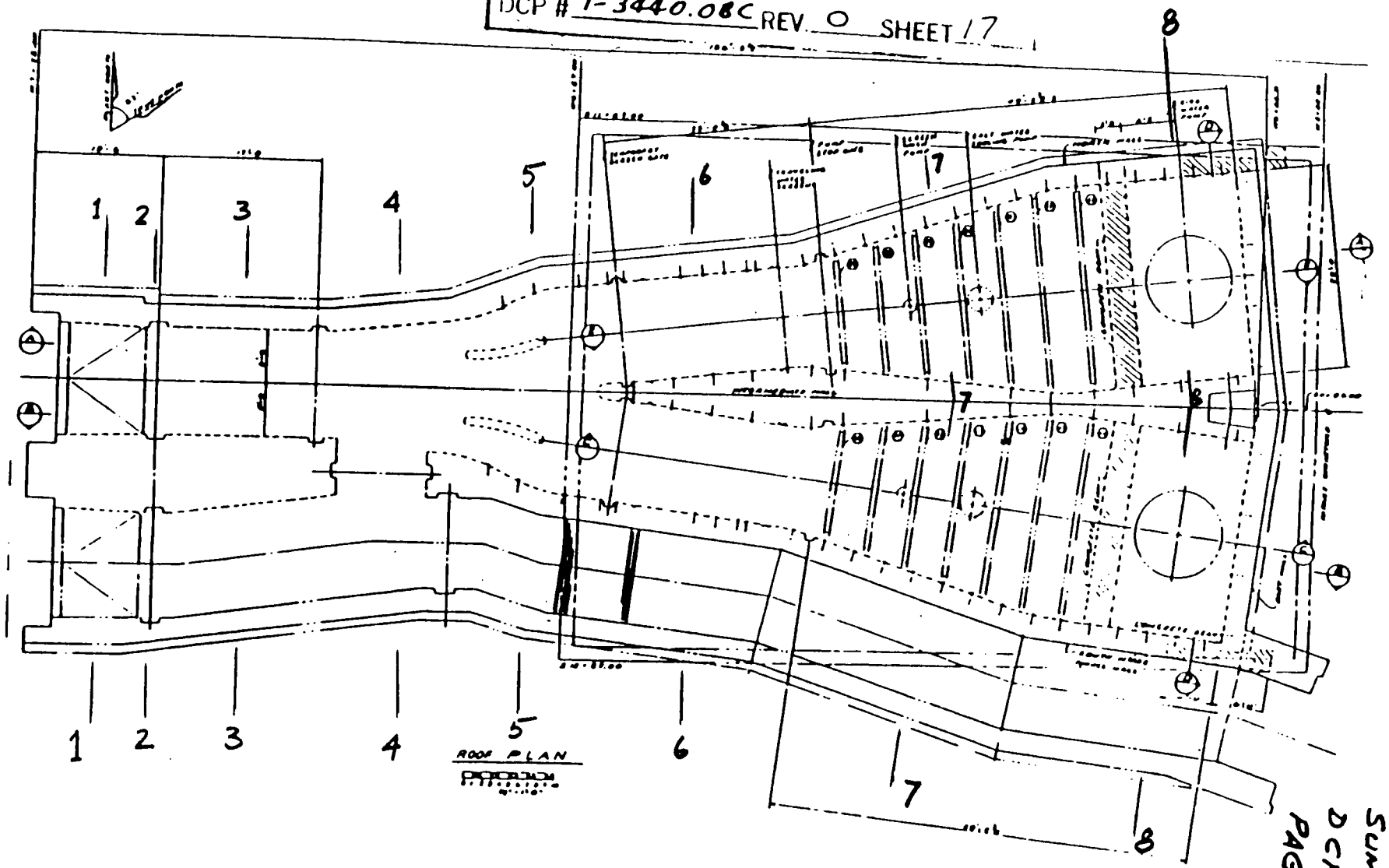
References

1. Report Attached to the SCE letter dated October 18, 1984.

2. Report of the First Surveillance for SONGS Unit 1 Intake Structure dated June 11, 1986.

3. Second Surveillance Report for SONGS Unit 1 dated March, 1989.

DCP # 1-3440.08C REV. 0 SHEET 17



ATTACHMENT 1

SUMMARY (CONTINUED)
DCP 1-3440.08C
PAGE 2 OF 3

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Please contact us if you should have any questions regarding this request.

Sincerely,

original signed by

Charles M. Trammell, Senior Project Manager
Project Directorate V
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosure:
Request for Additional Information

cc: w/enclosure
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