

Southern California Edison Company

P. O. BOX 800 2244 WALNUT GROVE AVENUE ROSEMEAD, CALIFORNIA 91770

F. R. NANDY MANAGER OF NUCLEAR LICENSING

July 12, 1989

TELEPHONE (818) 302-1896

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

Gentlemen:

- Subject: Docket No. 50-206 Long-Term Electrical Cable Monitoring Program San Onofre Nuclear Generating Station Unit 1
- References: A) "Investigation Report of November 21, 1985 Water Hammer Event," transmitted by letter dated April 8, 1986, from M. O. Medford (SCE) to A. E. Chaffee (NRC)
 - B) "Investigation of the November 1985 In-Service Cable Failure and Report on the Material Condition of Cables," transmitted by letter dated June 3, 1986, from M. O. Medford (SCE) to G. E. Lear (NRC)
 - C) "Technical Evaluation of Issues from the NRC Staff Action Plan in Response to the November 21, 1985 Event at San Onofre Unit 1," transmitted by letter dated November 12, 1986, from T. M. Novak (NRC) to K. P. Baskin (SCE)

The enclosed site procedure number SO1-XVII-30, dated June 13, 1989, describes SCE's monitoring program to assure the long term integrity of 4 kV and lower voltage electrical cables which are in use at San Onofre Unit 1. The need for long-term cable monitoring was recognized as a result of the November 21, 1985 loss of offsite power and water hammer event at San Onofre Unit 1, which is described in References A, B and C.

By Reference C, the NRC informed SCE that a description of the proposed cable monitoring program should be submitted. Procedure number SO1-XVII-30 is being submitted in response to that request. The procedure identifies all circuits to be monitored, specifies the test frequency for each individual circuit and contains acceptance criteria. For circuits that fail the acceptance criteria, the procedure provides guidance on possible failure modes and actions that can be taken to locate the source of the failure.

At the time of the water hammer event, Hi-Pot overvoltage testing was SCE's standard test to verify cable integrity. An integral feature of the current

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San Onofre Unit 1 cable monitoring program is its reliance on the Electrical Characterization and Diagnostics (ECAD) System 1000. The ECAD technology was developed as part of the accident recovery at Three Mile Island and provides a nonintrusive, nondestructive method of evaluating cable integrity. Typical problems that can be located with the ECAD system include water intrusion, poor insulation, ground paths, impedance mismatches, bad connectors and phase imbalances.

Implementation of the enclosed program was initiated during the Cycle 10 refueling outage, which began in November, 1988. It is expected that the program will be reviewed and revised periodically, as deemed appropriate.

If there are any questions regarding this submittal, please contact me.

Very truly yours,

Enclosure

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