

April 3, 1997

Mr. Harold B. Ray  
Executive Vice President  
Southern California Edison Company  
San Onofre Nuclear Generating Station  
P. O. Box 128  
San Clemente, California 92674-0128

SUBJECT: REQUEST FOR INFORMATION REGARDING THE PRESSURIZER THERMAL TRANSIENT  
ON SAN ONOFRE NUCLEAR GENERATING STATION UNIT 2 (TAC NO. M98232)

Dear Mr. Ray:

During the recent shutdown of San Onofre Nuclear Generating Station Unit 2 to repair a small leak in the pressurizer, the pressurizer cooldown rates exceeded the technical specification (TS) allowable cooldown rate of 200°F in any one hour period on March 4, 1997. Action A.1 of TS 3.4.3.1, "Pressurizer Heatup and Cooldown Limits," requires that an evaluation be performed to verify that the pressurizer is acceptable for continued operation when the heatup or cooldown limits are exceeded. Such an evaluation was performed by your staff, and the results were provided to the NRC in a letter dated March 14, 1997.

Please provide a response within 30 days of the date of this letter to the enclosed request for additional information. Your response to these questions will allow the staff to verify that the analysis performed in support of the March 14, 1997, letter satisfies the criteria in Appendix G of the ASME Code.

Sincerely,

ORIGINAL SIGNED BY

Mel B. Fields, Project Manager  
Project Directorate IV-2  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-361

Enclosure: Request for Additional  
Information

cc w/encl: See next page

DISTRIBUTION:

Docket File           ACRS, TWFN  
PUBLIC                 OGC, 015B18  
PDIV-2 Reading       KPerkins, WCFO  
JRoe                   AHowell, RIV  
EAdensam             JStrosnider  
WBateman             EPeyton  
MFields

DOCUMENT NAME: BARRY.LTR

OFC	PDIV-2/PM	PDIV-2/LA	EMGB/BCU
NAME	MFields:ye	EPeyton	JStrosnider
DATE	4/3/97	3/21/97	4/3/97

OFFICIAL RECORD COPY

9704070226 970403  
PDR ADOCK 05000361  
P PDR

*Drol*  
*11*



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

April 3, 1997

Mr. Harold B. Ray  
Executive Vice President  
Southern California Edison Company  
San Onofre Nuclear Generating Station  
P. O. Box 128  
San Clemente, California 92674-0128

SUBJECT: REQUEST FOR INFORMATION REGARDING THE PRESSURIZER THERMAL TRANSIENT  
ON SAN ONOFRE NUCLEAR GENERATING STATION UNIT 2 (TAC NO. M98232)

Dear Mr. Ray:

During the recent shutdown of San Onofre Nuclear Generating Station Unit 2 to repair a small leak in the pressurizer, the pressurizer cooldown rates exceeded the technical specification (TS) allowable cooldown rate of 200°F in any one hour period on March 4, 1997. Action A.1 of TS 3.4.3.1, "Pressurizer Heatup and Cooldown Limits," requires that an evaluation be performed to verify that the pressurizer is acceptable for continued operation when the heatup or cooldown limits are exceeded. Such an evaluation was performed by your staff, and the results were provided to the NRC in a letter dated March 14, 1997.

Please provide a response within 30 days of the date of this letter to the enclosed request for additional information. Your response to these questions will allow the staff to verify that the analysis performed in support of the March 14, 1997, letter satisfies the criteria in Appendix G of the ASME Code.

Sincerely,

A handwritten signature in cursive script that reads "Mel B. Fields".

Mel B. Fields, Project Manager  
Project Directorate IV-2  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-361

Enclosure: Request for Additional  
Information

cc w/encl: See next page

Mr. Harold B. Ray

- 2 -

cc w/encl:

Mr. R. W. Krieger, Vice President  
Southern California Edison Company  
San Onofre Nuclear Generating Station  
P. O. Box 128  
San Clemente, California 92674-0128

Resident Inspector/San Onofre NPS  
c/o U.S. Nuclear Regulatory Commission  
Post Office Box 4329  
San Clemente, California 92674

Chairman, Board of Supervisors  
County of San Diego  
1600 Pacific Highway, Room 335  
San Diego, California 92101

Mayor  
City of San Clemente  
100 Avenida Presidio  
San Clemente, California 92672

Alan R. Watts, Esq.  
Woodruff, Spradlin & Smart  
701 S. Parker St. No. 7000  
Orange, California 92668-4702

Mr. Sherwin Harris  
Resource Project Manager  
Public Utilities Department  
City of Riverside  
3900 Main Street  
Riverside, California 92522

Dr. Harvey Collins, Chief  
Division of Drinking Water  
and Environmental Management  
California Department of Health Services  
P. O. Box 942732  
Sacramento, California 94234-7320

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
Harris Tower & Pavilion  
611 Ryan Plaza Drive, Suite 400  
Arlington, Texas 76011-8064

Mr. Terry Winter  
Manager, Power Operations  
San Diego Gas & Electric Company  
P.O. Box 1831  
San Diego, California 92112-4150

Mr. Steve Hsu  
Radiologic Health Branch  
State Department of Health Services  
Post Office Box 942732  
Sacramento, California 94234

REQUEST FOR ADDITIONAL INFORMATION  
SAN ONOFRE NUCLEAR GENERATING STATION UNIT 2  
PRESSURIZER STRUCTURAL INTEGRITY ANALYSIS  
DOCKET NO. 50-361

1. Using the reported reference temperature ( $RT_{NDT}$ ) of 60°F for the surge nozzle forging, a 1/4 thickness (1/4T) deep flaw and the thermal transient that represents the cooldown of the surge nozzle, provide the following information at a sufficient number of time increments in the transient to demonstrate that the surge nozzle will meet the Appendix G criteria for the entire transient:
  - (a) the values of the primary membrane stresses due to pressure,
  - (b) the values of the thermal stress due to the thermal gradient,
  - (c) the values of the membrane stress intensity factor,
  - (d) the values of the thermal stress intensity factor,
  - (e) the temperatures of the surge nozzle at the 1/4T location, and
  - (f) the values of the reference stress intensity factor ( $K_{Ia}$ ) at the 1/4T location.
2. Describe the stress analysis and the method of converting the stresses into stress intensity factors.
3. Provide the basis for the conclusion that the deepest postulated flaw should be a 1/10T. As justification for this assumption provide the following information:
  - (a) the volume of the surge nozzle inspected,
  - (b) the method of inspection of the surge nozzle,
  - (c) the results from the qualification demonstration for the inspectors, the equipment, and the procedures, and
  - (d) the probability of detection (POD) of a 1/10T flaw based on the qualification of the inspectors, equipment and procedures.