March 22, 2001

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

SUBJECT: SAFETY EVALUATION RE: GENERIC LETTER 95-07, "PRESSURE LOCKING AND THERMAL BINDING OF SAFETY-RELATED POWER-OPERATED GATE VALVES," SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3 (TAC NOS. M93515 AND M93516)

Dear Mr. Ray:

On August 17, 1995, the NRC issued Generic Letter (GL) 95-07, "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves," to request that licensees take actions to ensure that safety-related power-operated gate valves that are susceptible to pressure locking or thermal binding are capable of performing their safety functions.

In a letter of February 13, 1996, you submitted your 180-day response to GL 95-07 for San Onofre Nuclear Generating Station, Units 2 and 3. In response to our request for additional information dated July 31, 1996, and June 15, 1999, and several telephone discussions with your staff, by letters dated September 3, 1996, July 21 and November 12, 1999, June 6, 2000, and February 28, 2001, you provided additional information.

We have reviewed your submittals including the additional information and determined that you have adequately addressed the actions requested in GL 95-07, as discussed in the enclosed safety evaluation. This completes our efforts on technical assignment control (TAC) Nos. M93515 and M93516 and the TACs are closed.

Sincerely,

/RA/

L. Raghavan, Senior Project Manager, Section 2 Project Directorate IV & Decommissioning Division of Licensing Project Management Office of Nuclear Reactor Regulation

Docket Nos. 50-361 and 50-362

Enclosure: As stated

cc w/encls: See next page

_				Dter De Tridge Frigerigerigerigerigerigerigerigerigerige	Roman (Second States) (Second Second Second	LAND TA GELIKING PUTPINEL COMPLY LOND OF BOARD OF BUT AND A COMPLY AND A COMPLY AND A COMPLY AND A COMPLY AND A
	DATE	NAME	OFFICE	Accession Solution ML010820141		
3/21/01 3/21/01 OFFICIAL	3/21/01	LRaghavan:lcc	PDIV-2/PM	ML010820141	PDIV-2 Stokesnætættepælge	(TACAAMDEST, MISARIKU SKAIBHENHING
		MMcallister	PDIV-D/LA	NRR: 106 Of Doi d Pasib j არაშერით მისაფერი ფალი g Section 2		bilitional of ensuring Section 2
- RECORD COPY	03/18/01	DTerao *	EMCB			
3/22/01 'Y					* See staff's SE ML010750115)	
	3/22/01	SDembek	PDIV-2/SC			

Sate Dalling Sector State Stat

Enclosure

10 CFR Part 5 those systems design and tes Criteria 1 and (10 CFR) PartTiple(Apprendex suojiejnbey jejepej jo epoj

REGULZATORY REQL

many plants as operation. Opvalve is subjec (wedge and va Pressure locking

made to open gate valve that pressurized flu requirements r the valve bonn occurs in flexib require a thoro identification of that can rende Pressure lockin

INTRODUCTION

DOCKET NOS. 50-361 AND 50-362

SAN ONOFRE NUCLEAR (

THE CITY OF ANAHEIM, CALIFORNIA

THE CITY OF RIVERSIDE, CALIFORNIA

SAN DIEGO GAS AND ELECTRIC CO

SOUTHERN CALIFORNIA EDISON C

AND THERMA

LICENSEE RESPONS

<u>SAFET</u>

GL 95-07, and reviewed the s GL 95-07 beca 2(3)HV9306, 2 July 21, 1999, 1999, describe locking or them power-operate GL 95-07 requ

Scope of Licensee's R

STAFF 3E VALUATION

information for 2000, and Feb licensee provid additional infor (SONGS), Unit submitted its 1 In a letter of Fe

compliance wit 10 CFR 50.109 locking or theri corrective action susceptibility e valves are or a to the NRC a s requested that functions unde susceptible val analyses and t valves that are operational cor licensee, withir functions within susceptible to take certain ac Thermal Bindir On August 17,

safety function susceptible to XVI), licensees commitments,

the valve. coefficient of friction of the thrust required to of did not confirm that the validated the pressure results and disagreed pressure-locking cond conservatively predictor methodology. The lice valve and analysis of t In its submittal dated of

for the internal spring-March 16, 2000, the N side of the valve to 30 pressure locking by lin The internal spring-loa that each valve is equivalves. One of the un The design of WKM ga

SDCS Bypass 20(3),bW 93789 sure SI Su SDCS Bypass 20(3),bW 93788 sure SI Su SDCS Bypass 20(3),bW 9378 sure SI Su SDCS from Re2(3),bW 9378 sure SI Su SDCS to Low P2(2),bW 9377 pump Shutdown Coo2(6),BY 93886 (SDCS) to

> following WKM gate vagate valve thrust equa The licensee develope

> > paragraphs. problems. The proposed corre modes of plant susceptible val and take appro GL 95-07 requ

Correct® Actions

Testing and Su motor-operated operated valve is closed for te inoperable and surveillance bu Normally open

Environmental Labora locking tests sponsore locking thrust and actu The results of the calc

Refueling Water(S)tb/200276nk to Cha Containment Sp(3),H%93666n Containment Sp(3),H%93666n BAMU Pump t2(3),H%93247Pump Suct BAMU Tank to2(3),H%9247Pump Suct Boric Acid Mak2(3),H(BA2(45)) Tank Gra

> Target Rock during pr the thrust required to a A modified industry ga

> WKM gate valves is an NRC staff concludes t upstream side of the v Marotta poppet subas disassembled for main 2(3)HV9378, 2(3)HV9 loaded Marotta poppe July 21, 1999, the lice conditions will not exis evaluation of seat lead methodology for use of Although not agreeing

> and not exposed to inc isolated from a high pi from the high pressure long-term shutdown co valves are not require are not opened until a approximately 1 hour results for each valve, testing. An evaluation Category A active mot 2(3)HV9379 are includ The licensee stated th back to 1982 indicates initiate shutdown cooli a reactor shutdown or pressure-locking cond combination of operati locking methodology, Rather than attempting

licensee has a performing the licensee has ta susceptible to identify valves evaluations of On the basis o

CONCL4JSION

valves are acceptable NRC staff concludes t susceptible to thermal licensee appear to proprior to the fluid tempe capability and procedu actuators were modifie magnitude of the therr susceptible to thermal and 2(3)HV8153, exce conditions for the shut occur below specific te susceptible to thermal GL 95-07 were evalua The licensee stated th

the licensee's action to 40 percent. Until more calculated pressure lo performing their intend assurance that double finds that the modified underestimated the th thrust equation trende Tests of Gate Valves.' documented in NURE