#### SOUTHERN CALIFORNIA EDISON COMPANY SAN ONOFRE NUCLEAR GENERATING STATION UNIT 1 INSERVICE INSPECTION SUMMARY REPORT INTERVAL 2; PERIOD 3; OUTAGE 1 REFUELING CYCLE 11

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## FORM NIS-1 OWNER'S DATA REPORT FOR INSERVICE INSPECTION

As required by the Provisions of the ASME Code Rules

- Southern California Edison (SCE) 1. Owner: San Diego Gas & Electric 2244 Walnut Grove 101 Ash Street Rosemead, CA 92770 San Diego, California
- 2. Plant: San Onofre Nuclear Generator Stations (SONGS) Baseline Road, San Clemente, CA 92674-0128

3. Unit: 4. Owner Certificate of Authorization: One N/A

5. Commercial Service Date: January 1, 1968

6. National Board Number for Unit: N/A

7. Components Inspected:

COMPONENT OR APPURTENANCE	MANUFACTURER OR INSTALLER	MANUFACTURER OR INSTALLER SERIAL NO.	STATE NO.	NATIONAL BOARD NO.
REACTOR VESSEL	COMBUSTION ENGINEERING	CE-61102	23153-70	14921
CLOSURE HEAD	COMBUSTION ENGINEERING	CE-61201	23153-70	14921
RCP "C"	WESTINGHOUSE	3-U149	23153-70	N/A
PRESSURIZER	WESTINGHOUSE	16 A 4850-1	23153-70	608
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Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided: (1) Size is 8<sup>3</sup> in. x 11 in., (2) Information in items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

8. Examination Dates: May

May 25, 1989 to March 23, 1991

9. Inspection Interval: January 1, 1978 to November 30, 1991

10. Abstract of Examinations:

The scope of the Inservice Inspection during the Unit 1 Cycle 11 Refueling Outage consisted of components within the Reactor Coolant System, augmented ISI examinations of postulated break points in the Main Steam System and Steam Generator Tubing as described in Section B and C of the Inservice Inspection Report. Approximately 75% of the required examinations have been completed for the second interval.

11. Abstract of Conditions Noted:

Recordable indications noted during this Inspection as described in Section C & Section D were evaluated and consider to be minor in nature.

12. Abstract of Corrective Measures Recommended and Taken:

Rounded indication found during liquid penetrant testing were found acceptable. Visual indication found on the Irradiation Specimen Basket and Thermal Shield Core Barrel Support Blocks and Flexures were documented as nonconformities and repaired.

We Certify that the statements made in this report are correct and the examinations and corrective actions taken conform to the rules of ASME Code, Section XI.

1991 Signed: SCE (Owner) by Date: 6/20

Certificate of Authorization No. (if applicable): N/A Expiration Date: N/A

### CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of *California*, employed by *Arkwright Mutual Insurance Company (Factory Mutual System)* of *Norwood*, *Massachusetts* have inspected the components described in this Owners' Data Report during the period from *May 25*, 1989 to *March 23*, 1991 and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective action described in this Owners' Data Report in accordance with Section XI of the ASME Code.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations or corrective measures described in this Owners' Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

20\_, 1991 Date: <u>Alme</u> Commission: California 1862 angson (National Board, State) (Inspector's Signature)

Southern California Edison Company San Onofre Nuclear Generating Station Unit 1 Inservice Inspection Summary Report Interval 2; Period 3; Outage 1 Refueling Cycle 11

#### INTRODUCTION

Inservice Nondestructive Examinations were performed on the San Onofre Nuclear Generating Station, Unit 1, Class 1 and Class 2 systems and components from July 1990 through August 1990.

The Inservice Inspection Summary Report is submitted in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Article IWA 6000, Paragraph IWA-6220, 1974 Edition/Summer 1975 Addenda, and the Unit 1 Technical Specifications.

The Inservice Examination Program included nondestructive visual, surface and volumetric examination methods conducted in accordance with the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components", 1974 Edition, with Addenda through Summer 1975 and the Unit 1 Technical Specifications.

These nondestructive examinations were performed in accordance with procedures which were reviewed and approved by qualified plant personnel prior to their implementation.

#### RESULTS

The results of each examination has been recorded on the examination data sheets which are included in this report. The recording conventions were in accordance with the examination procedures applicable to the items and examination methods.

Information resulting from repairs or indication removal as well as any additional examinations and/or tests along with the appropriate code references are documented and maintained as part of the permanent plant Quality Assurance records file.

Recordable indications and their disposition are tabulated in Section E of this report.

A summary of recordable indications are given below:

#### Class 1 :

- A. Volumetric Examination:
  - 1. One indication was recorded in the Reactor Vessel base material outside of the examination boundary.
- B. Surface Examinations:
  - 1. Four indications were recorded on the Loop B inlet and outlet safe end welds.
- C. Visual Examinations:
  - Visual examinations as required by Code category B-N-1 and B-N-3, Code item No. B 1.15 and B 1.17 were performed on visually accessible surfaces as identified per Unit 1 Reactor General Assembly Drawing 647J266 which is an owner controlled document located in CDM.
  - 2. Confirmation was made of the indications which had been previously identified and are being repaired as a function of the Thermal Shield/Core Barrel repairs during the Cycle 11 outage.

AUGMENTED ISI - HIGH ENERGY LINES

Four welds were examined on the Main Steam safety and reliefs East and West header. No recordable indications were found in the welds on High Energy Lines.

#### LIMITATIONS

Due to the plant having been designed and fabricated prior to the establishment of the Section XI access and examination requirements, portions of piping or component examinations are limited by geometric configuration, adjacent structures or other access considerations. As a result of this situation during the Cycle 11 outage, the examination limitations and allowances in A.S.M.E. Code Case N-460 dated July 27, 1988, were exercised.

#### EXAMINATIONS

Automated and manual nondestructive examinations were conducted on an examination zone as required by the ASME Code and ASME Code Case N-460 dated July 27, 1988, due to the limitations imposed by the geometric, physical, and material conditions. When an examination zone was not completely accessible, the limiting condition was noted on the examination data sheet.

Reflectors detected by ultrasonic examination and identified as a geometric anomaly, were noted on the Examination Data Sheet as (NRI) or "Non-Reportable Indications".

# UNIT 1 CYCLE 11

### AUTHORIZED NUCLEAR INSERVICE INSPECTORS

#### SAN ONOFRE NUCLEAR GENERATING STATION

J.	<b>L</b> '.	Westphall	D.	J.	Manning	Ε.	J.	Varrett
м.	N.	Contractor	z.	c.	Cordero	H.	D.	Haston
			c.	D.	Thompson			

Arkwright Mutual Insurance Company Factory Mutual System 1158 Boston - Providence Turnpike Norwood. MA. 02062

REACTOR	COOLANT SYSTEM			INDEX: 1.1.1 SKETCH/ISO: 1-1100
ITEM	NDE PROCESS	DATE	CODE Category	REMARKS
10	AUT	8/4/90	B-B/B1.2	· · · · · · · · · · · · · · · · · · ·
2C	AUT	8/9/90	B-A/B1.1	
3C	AUT	8/5/90	B-A/B1.1	
<b>4C</b>	AUT	8/5/90	B-A/B1.1	
5C	AUT	8/2/90	B-C/B1.3	(AUT FROM FLANGE FACE)
5C	AUT	8/8/90	B-C/B1.3	(AUT FROM ID OF RV)
1L	AUT	8/4/90	B-B/B1.2	
2L	AUT	8/4/90	B-B/B1.2	
3L	AUT	8/4/90	B-B/B1.2	
4L	AUT	8/4/90	B-B/B1.2	
5L	AUT	8/4/90	B-B/B1.2	
6L	AUT	8/4/90	B-B/B1.2	
7L	AUT	8/6/90	B-A/B1.1	
8L	AUT	8/6/90	B-A/B1.1	
9L	AUT	8/6/90	B-A/B1.1	
10L	AUT	8/7/90	B-A/B1.1	INDICATION OUTSIDE OF EXAMINATION AREA (SEE ACCEPTANCE EVALUATION)
11L	AUT	8/7/90	B-A/B1.1	
12L	AUT	8/7/90	B-A/B1.1	
13L	AUT	8/7/90	B-A/B1.1	
14L	AUT	8/7/90	B-A/B1.1	
15L	AUT	8/7/90	B-A/B1.1	

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ITEM	NDE PROCESS	DATE	CODE Category	REMARKS
1N	AUT	8/13/90	B-D/B1.4	LOOP B OUTLET NOZZLE TO VESSEL
1N	AUT	8/13/90	B-D/B1.4	LOOP B OUTLET INTEGRAL EXTENSION
B-1	AUT	******	B-F/B1.6	LOOP B OUTLET NOZZLE TO SAFE END (NOT EXAMINED DUE TO PREVIOUS ACCEPTABLE 2nd INTERVAL EXAM)
B-2	AUT	*****	B-F/B4.1	LOOP B OUTLET SAFE END TO PIPE ( EXAMINED DUE TO PREVIOUS ACCEPTA 2nd INTERVAL EXAM)
2N	AUT	8/9/90	B-D/B1.4	LOOP B INLET NOZZLE TO VESSEL
2N	AUT	8/14/90	B-D/B1.4	LOOP B INLET NOZZLE INNER RADIUS
B-18	AUT	8/15/90	B-F/B1.6	LOOP B INLET NOZZLE TO SAFE END
B-17	AUT	8/15/90	B-F/B4.1	LOOP B INLET SAFE END TO PIPE
3N	TUA	8/14/90	B-D/B1.4	· LOOP C OUTLET NOZZLE TO VESSEL
3N	AUT	8/14/90	B-D/B1.4	LOOP C OUTLET NOZZLE INTEGRAL Extension
C-1	AUT .	8/15/90	B-F/B1.6	LOOP C OUTLET NOZZLE TO SAFE END
C-2	AUT	8/15/90	B-F/B4.1	LOOP C OUTLET SAFE END TO PIPE

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	REACTOR CO Reactor ve	OLANT SYSTEM	<u></u>	INDEX: 1.1.1 SKETCH/ISO: 1-1400 & 1-1100	
	ITEM	NDE PROCESS	DATE	CODE Category	REMARKS
	4N	AUT	8/14/90	B-D/B1.4	LOOP C INLET NOZZLE TO VESSEL
	4N	AUT	8/15/90	B-D/B1.4	LOOP C INLET NOZZLE INNER RADIUS
	C-18	AUT	8/15/90	B-F/B1.6	LOOP C INLET NOZZLE TO SAFE END
•	C-17	AUT	8/15/90	B-F/B4.1	LOOP C INLET SAFE END TO PIPE
	5N	AUT	8/12/90	B-D/B1.4	LOOP A OUTLET NOZZLE TO VESSEL
	5N	AUT	8/15/90	B-D/B1.4	LOOP A OUTLET INTEGRAL EXTENSION
- 	A-1	AUT	*****	B-F/B1.6	LOOP A OUTLET NOZZLE TO SAFE END (NOT EXAMINED DUE TO PREVIOUS ACCEPTABLE 2nd INTERVAL EXAM)
D	A-2 .	AUT	*****	B-F/B4.1	LOOP A OUTLET NOZZLE TO SAFE END (Not examined due to previous Acceptable 2nd interval exam)
	6N	AUT	8/13/90	B-D/B1.4	LOOP A INLET NOZZLE TO VESSEL
	6N	AUT	8/15/90	B-D/B1.4	LOOP A INLET NOZZZLE INNER RADIUS
	A-18	AUT	8/13/90	B-F/B1.6	LOOP A INLET NOZZLE TO SAFE END
	A-17	AUT	8/13/90	B-F/B4.1	LOOP A INLET SAFE END TO PIPE
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	EACTOR COO	DLANT SYSTEM SSEL			INDEX: 1.1.1 SKETCH/ISO: 1-1400 & 1-29A
11	TEM	NDE PROCESS	DATE	CODE Category	REMARKS
1.	-S	AUT	8/10/90	B-H/B1.12	INTEGRALLY WELDED VESSEL SUPPORT
2.	-s	AUT	8/10/90	B-H/B1.12	INTEGRALLY WELDED VESSEL SUPPORT
3.	-s	AUT	8/10/90	B-H/1.12	INTEGRALLY WELDED VESSEL SUPPORT
B-	-1	PT	7/08/90	B-F/B1.6	LOOP B OUTLET NOZZLE TO SAFE END
B·	-2	PT	7/08/90	B-F/B1.6	LOOP B OUTLET SAFE END TO PIPE (INDICATION-ACCEPTABLE, SEE EXAM REPORT FOR THE INDICATION EVALUATION SHEET)
B-	-18	РТ	7/08/90	<b>B-F/B1.6</b> .	LOOP B INLET NOZZLE TO SAFE END
B-	-17	PT	7/08/90	B-F/B1.6	LOOP B INLET SAFE END TO PIPE (INDICATION-ACCEPTABLE, SEE EXAM REPORT FOR THE INDICATION EVALUATION SHEET)
C-	-1	PT	7/08/90	B-F/B1.6	LOOP C OUTLET NOZZLE TO SAFE END
C-	-2	PT	7/08/90	B-F/B1.6	LOOP C OUTLET SAFE END TO PIPE
c-	-18	PT	7/08/90	B-F/B1.6	LOOP C INLET NOZZLE TO SAFE END
C-	-17	PT	7/08/90	B-F/B1.6	LOOP C INLET SAFE END TO PIPE
A-	-1	PT	7/08/90	B-F/B1.6	LOOP A OUTLET NOZZLE TO SAFE END
A-	-2	PT	7/08/90	B-F/B1.6	LOOP A OUTLET SAFE END TO PIPE
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REACTOR COO Reactor Ves	LANT SYSTEM Sel			INDEX: 1.1.1 SKETCH/ISO'S: 1-29A, 1-1100 & 1-1300
ITEM	NDE PROCESS	DATE	CODE Category	REMARKS
A-18	PT	7/08/90	B-F/B1.6	LOOP A INLET NOZZLE TO SAFE END
A-17	PT	7/08/90	B-F/B1.6	LOOP A INLET SAFE END TO PIPE
6-C	MUT	7/26/90	B-C/B1.3	
7C	VISUAL		B-B/B1.3	CLOSURE HEAD TO DOME WELD (VT2 AT PRESSURE, PER RELIEF REQUEST DOCKET NO. 50-206)
CRDM59 Weld 866	MUT	7/22/90	B-0/B1.18	
8CR	VISUAL	8/04/90	B-E/B1.5	
18CR	VISUAL	8/04/90	B-E/B1.5	
28CR	VISUAL	8/04/90	B-E/B1.5	
38CR	VISUAL	8/04/90	B-E/B1.5	
48CR	VISUAL	8/04/90	B-E/B1.5	
58CR	VISUAL	8/04/90	B-E/B1.5	
3CR	VISUAL .	8/04/90	B-E/B1.5	
13CR	VISUAL	8/04/90	B-E/B1.5	·
23CR	VISUAL	8/04/90	B-E/B1.5	
33CR	VISUAL	8/04/90	B-E/B1.5	
43CR	VISUAL	8/04/90	B-E/B1.5	
53CR	VISUAL	8/04/90	B-E/B1.5	



"	REACTOR CO REACTOR VE	OLANT SYSTEM SSEL		INDEX: 1.1.1 SKETCH/ISO: 1-1100 & 1-1300	
	ITEM	NDE PROCESS	DATE	CODE Category	REMARKS
ŀ	CLADDING STUD HOLE #5 AREA	VISUAL	8/04/90	B-I-1/B1.13	(36 SQUARE IN.)
	CLADDING STUD HOLE #25 AREA	VISUAL	8/04/90	B-I-1/B1.13	(36 SQUARE IN.)
	CLADDING Stud Hole #40 Area	VISUAL	8/04/90	B-I-1/B1.13	(36 SQUARE IN.)
	RV CLADD Area 1	VISUAL	8/02/90	B-I-1/B1/14	(36 SQUARE IN.)
	RV CLADD Area 2	VISUAL	8/02/90	B-I-1/B1.14	(36 SQUARE IN.)
	RV CLADD Area 3	VISUAL	8/02/90	B-I-1/B1.14	(36 SQUARE IN.)
	RV CLADD Area 4	VISUAL	8/02/90	B-I-1/B1.14	(36 SQUARE IN.)
	RV CLADD Area 5	VISUAL	8/02/90	B-I-1/B1.14	(36 SQUARE IN.)
	RV CLADD Area 6	VISUAL	8/02/90	B-I-1/B1.14	(36 SQUARE IN.)
	RV INTER.	VISUAL	8/02/90	B-N-1/B1.15	(ACCESSIBLE AREAS)
	RV UPPER INTERNAL SUPPORTS	VISUAL	7/30/90	B-N-3/B1.17	(ACCESSIBLE AREAS)
	RV LOWER INTERNAL SUPPORTS	VISUAL	8/06/90	B-N-3/B1.17	CONFIRMED INDICATIONS PREVIOUSLY IDENTIFIED FOR REPAIR DURING THE UNIT 1 CYCLE 11 OUTAGE CORE BARREL)
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ITEM	NDE Process	DATE	CODE Category	REMARKS
# 29-42 14 EACH WASHERS	VISUAL	8/05/90	B-G-1/B1.10	
# 29-42 14 EACH STUDS & NUTS	MUT-MT	7/30/90	B-G-1/B1.8	
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		Generating S	tation (SONG	S) Unit	a Reactor Vessel	Inservice Inspection
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SONGS U	Jnit 1 React	tor Vessel Ins	ervice Inspecti	on – A	ugust 1990	
DOCUMENT TY	PE			KEY NO	OUNS	
Engineeri	ng Report			ISI,	AUT, RPV, NDE	, SONGS
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	DISTRIBUTION	MAIL	ABSTRACT	nertion -	f the SONGS Linit 1 m	actor pressure vessel was performed
*	NAME	ADDR	in accordance wit	h the AS	ME Boiler and Pressure	Vessel Code Section XI 1974 Edi-
E. Baumei	ster	HB15				U.S. NRC Regulatory Guide 1.150, ultrasonic (MUT) examinations of
R. Fuhrer		T039	the vessel shell w	elds, noz	zles, safe ends, studs, nu	its, and vessel supports were per-
R. B. Hard		T009				e performed on the RPV studs and d of the nozzle safe ends. Visual
*J. M. Harr		T009	(VT) examination	n of clad	areas 1 through 6, vesse	l interior, closure head cladding, er and lower internals were also
P. H. Horte W. R. John		T020	performed.	rations, c	ore barrer, and the upp	er and lower internais were also
C. H. Knox	·	T009 T009			cription of the equipme , completed on August	nt, examination techniques, and the
R. A. Mars		T009			mplete the SONGS Un	
*R. M. Mu	cica (2)	HA02				xamination Procedures."
B. Pilling		T038	b. 204DP00000 Data."	2, "Perso	nnel and Equipment Ce	rtifications and AUT Calibration
C. D. Rich *E. Sank (4		HB18 HA02	c. 204DP00000 AUT Loop /	A, Nozzle		r, PT and VT Examination Data. e Inside Radius Section, and Nozzla
			Safe End We d. 204DP00000		Examination Data: Loor	B and Loop C, Nozzle to Vessel
			Welds, Nozzl	le Inside	Radius Section and No.	zzle Safe End Welds."
					Examination Data: Lon Examination Data: Circ	gitudinal Shell Welds." umferential Shell Welds and Vessel
			Support Wel	ds."		
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# **Rocketdyne Division**

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	REV	SUMMARY OF CHANGE	APPROVALS AND DATE
	. A	<ul> <li>Pg. 5, Section B, 1st sentence, add "USK-6"</li> <li>Pg. 6, Section A, add item 12.</li> <li>Pg. 9, Section A, add item 12.</li> <li>Pg. 10, Section B, delete "Ligament Area Examinations"</li> <li>Pg. 16, add entry on Ligament Area</li> </ul>	W. John 2/14/91 R. A. Maestic II Milestic II Milestic II 2/14/91 Zhente 2/14/91 Rel. DATE: 2-26910
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#### I. INTRODUCTION

An Inservice Inspection of the reactor pressure vessel at the San Onofre Nuclear Generating Station (SONGS) Unit 1 was conducted by the Rocketdyne Division (RD) of Rockwell International, between July 6 and August 20, 1990. These inspections were performed during the thermal shield support replacement outage and mark the end of the second, ten year, inspection interval. The examinations were performed in accordance with Southern California Edison's (SCE) inspection plan.

Items listed in the examination plan were examined in accordance with the requirements of the ASME Boiler and Pressure Vessel Code Section XI, 1974 Edition, with addenda through Winter 1975 and the U.S. NRC Regulatory Guide 1.150, Rev 1, to the extent practical with the access provided and the limitations of component geometry.

Examination procedures, personnel, equipment, and material certification documents were reviewed and approved prior to the start of examinations. Surveillance and witnessing of the examinations and related activities were conducted by the Authorized Nuclear Inservice Inspectors (ANII) and SONGS Quality Assurance personnel.

A description of the examination techniques used during this inspection is contained in this report. A summary of the examination results is also presented.

Included in this report under separate cover are Technical Data Packages 204DP000001, 204DP000002, 204DP000003, 204DP000004, 204DP000005 and 204DP000006. These packages include Rocketdyne's Examination Plan, inspection procedures, personnel and equipment certifications, calibration data and the examination data. Also part of this report are three computer tapes, containing the AUT data, and four VHS video tapes, containing the remote visual examinations.

# II. EQUIPMENT

#### A. AUTOMATED ULTRASONIC

The automated ultrasonic examinations were performed using the Rocketdyne Inservice Inspection system. This system is composed of three basic units:

- 1. A control console
- 2. A PaR ISI-2 polar manipulator
- 3. Ultrasonic search units

The control console functions include data acquisition, processing and the remote control of the ultrasonic search units. Data collected from the search units is converted to digital form, processed by the console computer and stored for future reference. The control console also provides manual and computer controlled positioning instructions to the PaR manipulator.

The PaR ISI-2 polar manipulator was developed to inspect the welds in reactor pressure vessels. It provides the positioning for the ultrasonic search units. The six motor drives on the PaR provide the necessary positioning capability to perform all the required AUT examinations. The manipulator's position information is set up to correspond to the reactor vessel coordinate system. All AUT examinations are performed using vessel coordinates. Certain modifications to the PaR device were required to perform the examinations on the SONGS unit 1 reactor vessel.

The PaR manipulator normally uses a ten foot high extension tube to keep the vertical positioning motor above water level. The overhead crane at SONGS unit 1 was not high enough to accommodate the full height of the PaR manipulator. In addition, the relatively small diameter of the reactor vessel required the tripod legs on the PaR to be modified to fit the reactor vessel. Both of these problems were addressed by modifying the tripod legs and feet. Rocketdyne's small diameter set of legs was selected and the PaR's feet were rotated in toward the center of the vessel so they could clamp onto the alignment pins. The legs were extended vertically to keep the drive motor above the water while maintaining the required vertical extension into the reactor vessel. A miscommunication between SCE and Rockwell during the engineering of this solution resulted in the alignment pins interfering with the PaR legs. Adapter plates were constructed during the examination to rotate the upper portion of the PaR's legs to clear the alignment pins.

Ultrasonic search units are specific to each type of examination performed. Several search units are often used for each examination to provide the required ASME Code and Regulatory Guide 1.150 coverage. Various ultrasonic techniques such as contact, water path, pulse/echo, pitch/catch, shear angle beam and refracted longitudinal wave angle

beam, were used. The specific technique used for a particular examination may be found in the test procedure for that examination.

A more detailed discussion of the automated inspection system is presented in appendix C. This discussion covers the control console, the PaR manipulator, the search units and how the data is acquired.

### **B. MANUAL ULTRASONIC**

The manual ultrasonic (MUT) examinations were conducted using Krautkramer Model USK-6, USK-7 and USL-38 ultrasonic test instruments. Straight beam and 45 degree and 60 degree angle beam, 2.25 MHz, search units were used as specified by the referencing code section. The couplant used for all manual examinations was Ultragel II.

#### C. MAGNETIC PARTICLE

Florescent magnetic particle (aerosol packaged in an oil base) materials were used for the magnetic particle (MT) examinations. The materials were supplied by Magnaflux Co.. The certifications for these materials are presented in Volume 2 (204DP000002) of this report.

#### D. DYE PENETRANT

Solvent removable liquid penetrant materials were used for all dye penetrant (PT) examinations. All solvent, penetrant and developer materials were supplied by Magnaflux Co.. Certifications for these materials are presented in Volume 2 (204DP000002) of this report.

#### E. REMOTE VISUAL

A MiniRover MKI submersible was used to perform the underwater remote visual examinations. It is equipped with a color CCD video camera with full pan and tilt capabilities. Two quartz iodide lamps provided the required illumination for the examinations. A remote pan and tilt camera was also used to perform the visual examinations of the reactor vessel head. All examinations were recorded on VHS video tape for future reference.

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### III. COMPONENTS EXAMINED

### A. REACTOR PRESSURE VESSEL EXAMINATIONS

The areas examined during the inservice inspection of the SONGS Unit 1 reactor vessel are listed below:

- 1. Vessel circumferential shell welds 1C, 2C, 3C, 4C and 5C were examined using AUT techniques.
- 2. Vessel longitudinal shell welds 1L, 2L, 3L, 4L, 5L, 6L, 7L, 8L, 9L, 10L, 11L, 12L, 13L, 14L and 15L were examined using AUT techniques.
- 3. Nozzle to vessel shell welds A inlet, A outlet, B inlet, B outlet, C inlet and C outlet were examined both from the shell and from the nozzle bore using AUT techniques.
- 4. Nozzle inside radius sections A inlet, A outlet, B inlet, B outlet, C inlet and C outlet were examined using AUT techniques.
- 5. Nozzle safe end and safe end to pipe welds in A inlet, A outlet, B inlet and C inlet were examined using AUT and PT techniques. The nozzle safe end and safe end to pipe welds in B outlet and C outlet were examined using PT techniques.
- 6. Vessel supports 1S, 2S and 3S were examined using AUT techniques.
- 7. The control rod drive mechanism housing weld no. 59 and the closure head to flange weld 6C were examined using MUT techniques. The closure head studs and nuts were examined using MUT and MT techniques. The closure head washers were visually examined.
- 8. Clad areas 1 through 6 were examined using remote visual techniques.
- 9. The accessible areas of the vessel interior were examined using remote visual techniques.
- 10. The removable vessel upper and lower internal support structures and the core barrel internal and external surfaces were examined using remote visual techniques.
- 11. The control rod housing nozzle to head welds along with the closure head cladding were examined using remote visual techniques.
- 12. The reactor vessel flange ligament areas were examined using MUT techniques.

A summary of the components examined and the weld coverage maps are presented in Appendix A. A cross reference of each of the individual examinations is tabulated in Appendix B.

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### IV. RESULTS

#### A. EXAMINATION RESULTS

A brief summary of the examination results for each of the areas listed in Section III is presented below:

1. Vessel Shell Circumferential Welds 1C, 2C, 3C, 4C and 5C

These welds were ultrasonically (AUT) examined. They were examined for parallel, transverse, planar and laminar reflectors using 0, 45 and 60 degree search units. In addition, 70 degree search units were used to examine the near surface region for parallel and transverse reflectors.

The flange to vessel weld (5C) was examined for parallel reflectors from the flange surface. Refracted L-wave search units with 0, 5, 10 and 15 degree angle beams were used.

NO REPORTABLE INDICATIONS WERE OBSERVED.

2. <u>Vessel Shell Longitudinal Welds 1L, 2L, 3L, 4L, 5L, 6L, 7L, 8L, 9L, 10L, 11L, 12L, 13L, 14L and 15L</u>

These welds were ultrasonically (AUT) examined. They were examined for parallel, transverse, and laminar reflectors using 0, 45 and 60 degree search units. In addition, 70 degree search units were used to examine the near surface region for parallel and transverse reflectors.

NO REPORTABLE INDICATIONS WERE OBSERVED.

3. <u>Nozzle to Vessel Shell Welds, A inlet, A outlet, B inlet, B outlet, C inlet and C</u> outlet

These welds were ultrasonically (AUT) examined. They were examined for transverse and laminar reflectors from the vessel shell using 0, 45 and 60 degree search units. They were examined for parallel reflectors from the nozzle inbore surface using 0 and 45 degree search units. These welds were also examined for underclad cracking (parallel reflectors) from the nozzle bore using a 45 degree beam.

#### NO REPORTABLE INDICATIONS WERE OBSERVED.

4. <u>Nozzle Inside Radius Sections, A inlet, A outlet, B inlet, B outlet, C inlet and</u> <u>C outlet</u>

These welds were ultrasonically (AUT) examined. The nozzle radii were examined in two directions using 60 degree search units. The remaining inbore part of the inside radius sections were examined in four directions using 45 degree search units.

NO REPORTABLE INDICATIONS WERE OBSERVED.

#### 5. Nozzle to Safe End and Safe End to Pipe Welds

The welds in A inlet, A outlet, B inlet and C inlet were ultrasonically (AUT) examined. They were examined for parallel and transverse reflectors using 45 degree search units. Surface conditions prevented full coverage of the safe end to pipe welds. This condition is further described in Section B of this report.

### NO REPORTABLE INDICATIONS WERE OBSERVED.

The welds in A inlet, A outlet, B inlet, B outlet, C inlet and C outlet were examined with dye penetrant. All of the accessible portions of the dissimilar metal welds were examined. Two (2) recordable indications were observed on the Loop B inlet safe end to pipe weld and two (2) recordable indications were observed on the Loop B outlet safe end to pipe weld. These indications were found to be acceptable.

#### NO REPORTABLE INDICATIONS WERE OBSERVED.

6. Vessel Support Welds, A, B and C

The vessel support welds were ultrasonically (AUT) examined using a 0 degree straight beam for parallel reflectors.

#### NO REPORTABLE INDICATIONS WERE OBSERVED.

7. <u>Closure Head Studs, Nuts and Washers</u>

The closure head studs and nuts, 29 through 42, were examined using ultrasonic straight beam (MUT) and magnetic particle techniques. The studs were examined ultrasonically (MUT) from each end surface. The thread and entire outer surface was examined by florescent magnetic particle.

The nuts, 29 through 42, were examined ultrasonically (MUT) from the end surface. The outer cylindrical surfaces were examined with florescent magnetic particle. The washers, 29 through 42, were visually examined.

### NO REPORTABLE INDICATIONS WERE OBSERVED.

8. Vessel Cladding Patch Areas 1, 2, 3, 4, 5 and 6

These clad areas were visually examined.

### NO REPORTABLE INDICATIONS WERE OBSERVED.

9. <u>Vessel Interior</u>

The accessible areas of the vessel interior were visually examined.

NO REPORTABLE INDICATIONS WERE OBSERVED.

10. Removable Core Support Structure and Vessel Upper and Lower Internals

The accessible areas of the core support structures (core barrel) and the upper and lower internal supports were visually examined. Recordable indications were observed on the flexural fixtures on the core barrel, on the irradiation specimen baskets and on the thermal shield support blocks. Details of these examinations reports are presented in Volume 3 (204DP000003) of this report. The above relevant indications have been previously identified and are presently being repaired under the thermal shield core barrel repair program to be completed during the Unit 1 cycle 11 outage.

#### 11. <u>Reactor Pressure Vessel Head</u>

The closure head to flange weld (6C) and the control rod drive mechanism housing weld (CR 59) were examined using MUT techniques.

#### NO REPORTABLE INDICATIONS WERE OBSERVED.

The accessible areas of the control rod housing nozzle to vessel welds along with closure head cladding were visually examined.

#### NO REPORTABLE INDICATIONS WERE OBSERVED.

12. Reactor Pressure Vessel Flange Ligament Areas

The flange ligament areas, between stud holes 29 through 42 were examined using MUT techniques.

#### NO REPORTABLE INDICATIONS WERE OBSERVED.

**B.** CODE EXCEPTIONS

#### 1. Coverage

Deviations from the inspection coverage required by Code are described below along with the reason for the limited coverage.

#### Nozzle to Vessel Welds

The coverage for transverse reflectors on all the nozzle to vessel welds was limited to 300 degrees around the nozzle. This examination was performed from the vessel shell. The inlet and outlet nozzles of each loop are constructed within close proximity of each other. This close proximity along with the outlet nozzle protrusion provided insufficient clearance for the automated equipment to inspect the 60 degree area directly between them.

# Loop A & B Outlet Nozzle to Safe End and Safe End to Pipe Welds

The nozzle to safe end and safe end to pipe welds on Loop A outlet nozzle and on Loop B outlet nozzle were not examined at this time. These examinations were performed during the Unit 1, 1980 refueling outage.

#### Loop B Inlet Nozzle to Safe End Weld

The region approximately 40 degrees to either side of TDC on the Loop B inlet nozzle to safe end weld and safe end to pipe weld was not examined in two directions. Parallel and transverse examinations achieved 90% of full coverage due to unique geometric and surface conditions resulting in trapped air. This condition prevented adequate penetration of the sound path in 10% of the required 100% coverage.

#### Safe End to Pipe Welds

An attempt was made to examine these welds with the nozzle to safe end equipment configuration. Geometric and surface conditions at the safe end to pipe welds limited the examination coverage. The percentage coverage for each individual weld is presented in the inspection summary table in appendix A.

#### 2. Procedural

One Inspection Discrepancy Report (IDR) was written for this inspection, IDR No. 31717. AUT procedure SO1-XXVII-20.9, Rev. O (204ISI000001), required recalibration and re-examination if any point on the DAC curve has changed by more than 20% (2 db) of its amplitude. The calibration recheck that was performed came in more sensitive than the original calibration, due to transducer wedge wear-in. Since the examination was performed at a higher sensitivity than required by Code and there were no recordable indications observed, the data was accepted as is. This information is documented on the Rocketdyne IDR No. 31717 and SCE NCR No. 90080052-00.

### V. EVALUATIONS

The recording and reporting of all indications detected during this inservice inspection were within the standards required by ASME Section XI, 1974 edition with addenda through Winter 1975 and U. S. NRC Regulatory Guide 1.150 revision 1.

Four recordable indications were found during dye penetrant examinations of the loop B safe end to pipe welds. These indications were characterized as rounded and found to be acceptable.

Several visual indications were observed during the remote visual examination of the core barrel on the flexural fixtures on the core barrel, on the irradiation specimen baskets and on the thermal shield support blocks. These indications had been previously identified and are presently being repaired under the thermal shield core barrel repair program.

One ultrasonic indication was evaluated on RPV circumferential weld 4C. This indication is outside the examination boundary. It was evaluated in accordance with ASME XI IWB-3510 and found to be acceptable.



### VI. SUMMARY

The inservice examination of the Southern California Edison, San Onofre Unit 1 reactor pressure vessel was conducted in accordance with the provisions of the ASME Boiler and Pressure Vessel Code, Section XI, 1974 Edition with addenda through Winter 1975 and U.S. NRC Regulatory Guide 1.150, revision 1. Volumetric, surface and visual examinations were conducted. Both manual and automated ultrasonic techniques were employed for the volumetric examinations. Magnetic particle and dye penetrant techniques were used for the surface examinations. Remote visual techniques were used for the visual examinations.

No defects requiring repair or rework were detected with the volumetric and surface examinations during this inspection. The visual examinations confirmed several defects that have been previously identified. These defects are presently being repaired under the thermal shield core barrel repair program. Based on the examinations performed on the reactor pressure vessel, this vessel meets the acceptance standards of Section XI of the ASME Code.



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# **APPENDIX A**

# INSPECTION SUMMARY AND AUT WELD COVERAGE MAPS

# INSPECTION SUMMARY AND AUT WELD COVERAGE MAPS

This appendix contains a table summarizing the various examinations performed and the AUT weld coverage diagrams for the August, 1990 ISI of the SONGS Unit 1 reactor vessel. The inspection summary table contains the components examined, the method used and any pertinent findings or coverage notes. The weld locations in the table are referenced to the building coordinates. The building's 0 degree location corresponds to the reactor vessel's 180 degree location.

The AUT weld coverage maps contain detailed information about the Code coverage achieved for each of the welds examined. All of the weld coverage maps and tables are referenced to the reactor vessel coordinate system.



SONGS UNIT 1 INSPECTION SUMMARY - 1990

DESCRIPTION	IWB 2600 REFERENCE	METHOD	EXAMINATION PROCEDURE SO1-XXVII-	REQUIRED COVERAGE	
1L BOTTOM HEAD PEEL AT 0°	B-B/B1.2	AUT	20.9 & 20.11	10%	
2L BOTTOM HEAD PEEL AT 60°	B-B/B1.2	AUT	20.9 & 20.11	10%	
SL BOTTOM HEAD PEEL AT 120°	B-B/81.2	AUT	20.9 & 20.11	10%	
4L BOTTOM HEAD PEEL AT 180°	B-B/B1.2	AUT	20.9 & 20.11	10%	
5L BOTTOM HEAD PEEL AT 240°	B-B/B1.2	AUT	20.9 & 20.11	10%	
6L BOTTOM HEAD PEEL AT 300°	B-B/B1.2	AUT	20.9 & 20.11	10%	
7L LOWER COURSE AT 37.5°	B-A/B1.1	AUT	20.9 & 20.11	50%	
BL LOWER COURSE AT 157.5°	B-A/B1.1	AUT	20.9 & 20.11	50%	
9L LOWER COURSE AT 277.5°	B-A/81.1	AUT	20.9 & 20.11	50%	
10L LOWER COURSE AT 95.5°	B-A/B1.1	AUT	20.9 & 20.11	50%	
11L LOWER COURSE AT 217.5°	B-A/B1.1	AUT	20.9 & 20.11	50%	
12L LOWER COURSE AT 337.5°	B-A/B1.1	AUT	20.9 & 20.11	50%	
13L LOWER COURSE AT 37.5°	B-A/B1.1	AUT	20.9 & 20.11	10%	
14L LOWER COURSE AT 157.5°	B-A/B1.1	AUT	20.9 & 20.11	10%	
15L LOWER COURSE AT 277.5°	B-A/B1.1	AUT	20.9 & 20.11	10%	
1C BOTTOM HEAD TO DOME	B-B/81.2	AUT	20.9 & 20.11	5%	
2C BOTTOM HEAD TO SHELL	B-A/B1.1	AUT	20.9 & 20.11	50%	
3C MIDDLE SHELL TO LOWER GIRTH	B-A/B1.1	AUT	20.9 & 20.11	50%	
4C MIDDLE SHELL TO UPPER GIRTH	B-A/B1.1	AUT	20.9 & 20.11	50%	Recordable indication outside of exam boundar
	8-C/81.3	AUT	20.9 & 20.11	100%	
5C UPPER SHELL TO FLANGE, SHELL 5C UPPER SHELL TO FLANGE, FLANGE		AUT	20.9 & 20.11	33-1/3%	100% examined
6N-NOZZLE TO VESSEL AT 285°	B-D/B1.4	AUT	20.12 & 20.16	100%	91.5% (2),(4)
6N-NOZZLE INNER RADIUS AT 285°	B-D/B1.4	AUT	20.8	100%	
A-18 NOZZLE TO SAFE END AT 285°	B-F/B1.6	AUT	20.13	100%	68% SEP-T, 60% SEP-P (3
A-18 NOZZLE TO SAFE END AT 285°	8-F/B1.6	PT	22.5	21%	(2)
2N-NOZZLE TO VESSEL AT 45°	B-D/B1.4	AUT	20.12 & 20.16	100%	91.5% (2),(4)
2N-NOZZLE INNER RADIUS AT 45°	8-D/81.4	AUT	20.8	100%	
B-18 NOZZLE TO SAFE END AT 45°	B-F/B1.6	AUT	20.13	100%	90% (4)
B-18 NOZZLE TO SAFE END AT 45°	8-F/81.6	PT	22.5	21%	(2)
					84% SEP-T, 73% SEP-P (3
4N-NOZZLE TO VESSEL AT 165°	B-D/B1.4	AUT	20.12 & 20.16	100%	91.5% (2),(4)
4N-NOZZLE INNER RADIUS AT 165°	B-D/B1.4	AUT	20.8	100%	
C-18 NOZZLE TO SAFE END AT 165°	B-F/81.6	AUT	20.13	100%	85% SEP-T, 74% SEP-P (3
C-18 NOZZLE TO SAFE END AT 165°	B-F/B1.6	PT	22.5	21%	(2)
SN-NOZZLE TO VESSEL AT 240°	B-D/B1.4	AUT	20.12 & 20.16	100%	91.5% (2),(4)
5N-NOZZLE INNER RADIUS AT 240°	8-D/81.4	AUT	20.8	100%	
A-1 NOZZLE TO SAFE END AT 405°	8-F/81.6	PT	22.5	21%	
IN-NOZZLE TO VESSEL AT 0°	B-D/B1.4	AUT	20.12 & 20.16	100%	91.5% (2),(4)
1N-NOZZLE INNER RADIUS AT 0°	B-D/B1.4	AUT	20.8	100%	
B-1 NOZZLE TO SAFE END AT 0°	B-F/B1.6	PT	22.5	21%	
3N-NOZZLE TO VESSEL AT 120°	B-D/B1.4	AUT	20.12 & 20.16	100%	91.5% (2),(4)
3N-NOZZLE INNER RADIUS AT 120°	B-D/81.4	AUT	20.8	100%	
C-1 NOZZLE TO SAFE END AT 120°	8-F/81.6	AUT	20.13	100%	51% SEP-T, 50% SEP-P (3
C-1 NOZZLE TO SAFE END AT 120°	8-F/81.6	PT	.22.5	21%	(2)
1-S INTEGRALLY WELDED AT 82.5°	B-H/B1.12	AUT	20.6	100%	· · · ·
2-S INTEGRALLY WELDED AT 202.5°	B-H/B1.12	AUT	20.6	100%	
3-S INTEGRALLY WELDED AT 322.5°	B-H/B1.12	AUT	20.6	100%	

(1) ACRONYMS ARE USED TO IDENTIFY SOME WELDS. THE NOZZLE TO SAFE END WELD IS "NSE", THE SAFE END TO PIPE, TRANSVERSE COVERAGE IS "SEP-T." THE SAFE END TO PIPE, PARALLEL COVERAGE IS "SEP-P."

(2) INTERFERENCE DUE TO NOZZLE GEOMETRY

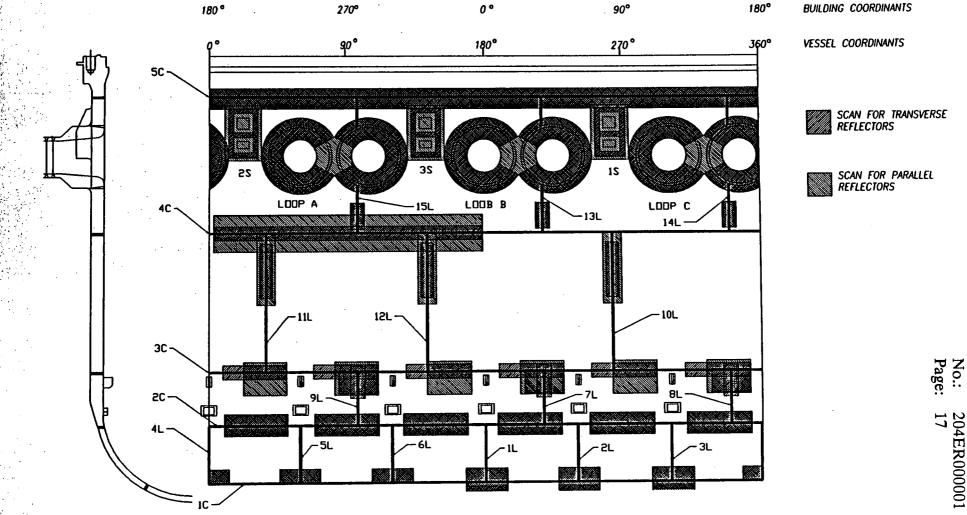
(3) INTERFERENCE DUE TO SURFACE CONDITION

(4) CODE CASE N-460

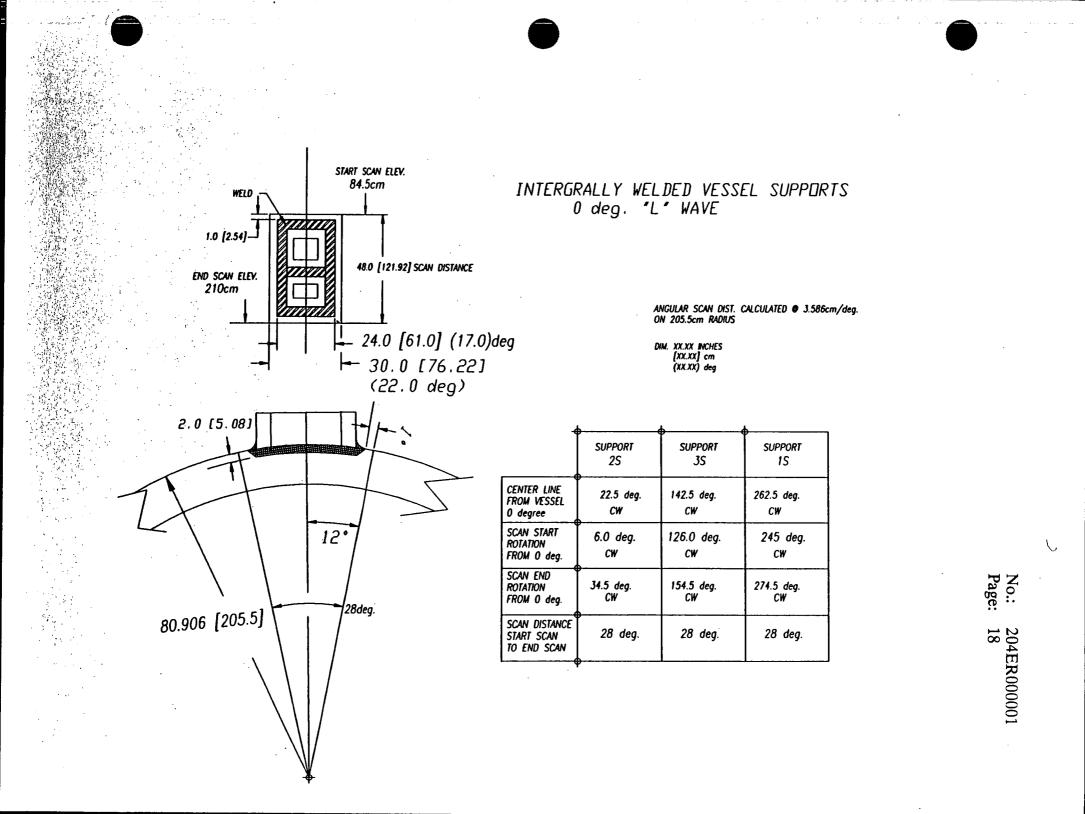
DESCRIPTION	IWB 2600 REFERENCE	METHOD	EXAMINATION PROCEDURE SO1-XXVII-	REQUIRED COVERAGE	REMARKS
6C CLOSURE HEAD TO FLANGE	B-C/B1.3	MUT	22.6	33-1/3%	
7C CLOSURE HEAD TO DOME	B-B/B1.2	MUT		5%	VT2 at pressur
59-866 CONTROL ROD DRIVE WELD 59		MUT	22.7	100%	•
BCR CONTROL ROD HOUSING WELDS	B-E/B1.5	VT	22.4	INNER FACE	
18CR CONTROL ROD HOUSING WELDS	B-E/81.5	VT	22.4	INNER FACE	
28CR CONTROL ROD HOUSING WELDS	B-E/B1.5	VT	22.4	INNER FACE	
38CR CONTROL ROD HOUSING WELDS	B-E/81.5	VT	22.4	INNER FACE	
48CR CONTROL ROD HOUSING WELDS	B-E/B1.5	VT	22.4	INNER FACE	
58CR CONTROL ROD HOUSING WELDS	B-E/81.5	VT	22.4	INNER FACE	
3CR CONTROL ROD HOUSING WELDS	B-E/B1.5	VT	22.4	INNER FACE	
13CR CONTROL ROD HOUSING WELDS	B-E/81.5	VT	22.4	INNER FACE	
23CR CONTROL ROD HOUSING WELDS	B-E/B1.5	VT	22.4	INNER FACE	
33CR CONTROL ROD HOUSING WELDS	B-E/81.5	VT	22.4	INNER FACE	
43CR CONTROL ROD HOUSING WELDS	B-E/B1.5	VT	22.4	INNER FACE	
53CR CONTROL ROD HOUSING WELDS	B-E/B1.5	VT	22.4	INNER FACE	
CLADDING NEAR STUD HOLE 5	B-I-1/81.13	VT	22.4	36 IN.	
CLADDING NEAR STUD HOLE 25	B-I-1/B1.13	VT	22.4	36 IN.	
CLADDING NEAR STUD HOLE 40	B-I-1/B1.13	VT	22.4	36 IN.	
VESSEL CLADDING PATCH, AREA 1		VT	22.4	36 IN.	
VESSEL CLADDING PATCH, AREA 2	BI-1/B1.14	VT	22.4	36 IN.	
VESSEL CLADDING PATCH, AREA 3 VESSEL CLADDING PATCH, AREA 4	BI-1/B1.14	VT	22.4	36 IN.	
VESSEL CLADDING PATCH, AREA 4	BI-1/B1.14	VT	22.4	36 IN.	
VESSEL CLADDING PATCH, AREA 5	BI-1/B1.14	VT	22.4	36 IN.	
VESSEL CLADDING PATCH, AREA 6	81-1/81.14	VT	22.4	36 IN.	
VESSEL INTERIOR	B-N-1/B1.15	VT	22.4	ACCESSIBLE	
VESSEL UPPER INTERNAL SUPPORTS	B-N-3/B1.17	VT	22.4	100%	
VESSEL LOWER INTERNAL SUPPORTS	B-N-3/B1.17	VT	22.4	100%	
29-42 (14 EA) WASHERS	B-G-1/B1/10	VT	22.4	100%	
29-42 (14 EA) STUDS & NUTS	8-G-1/81.8		22.1 & 22.10	100%	
29-42 (14 EA) LIGAMENT AREA	B-G-1/B1.9	MUT	20.7	33-1/3%	

# AUT WELD COVERAGE OVERVIEW

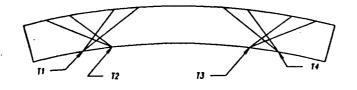
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204ER000001 17



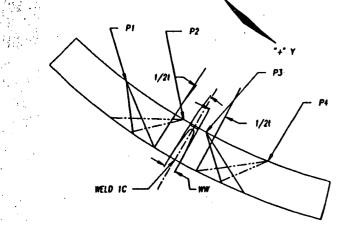
WELD 1C



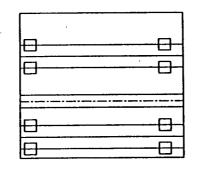


TRANSDUCER LAYOUT CIRC WELD

13.81-TYP

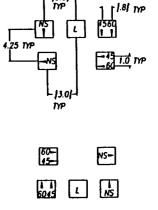


"-" Y





TRANSDUCER LAYOUT MINUS "Y" PLUS "X" SCAN DIR.



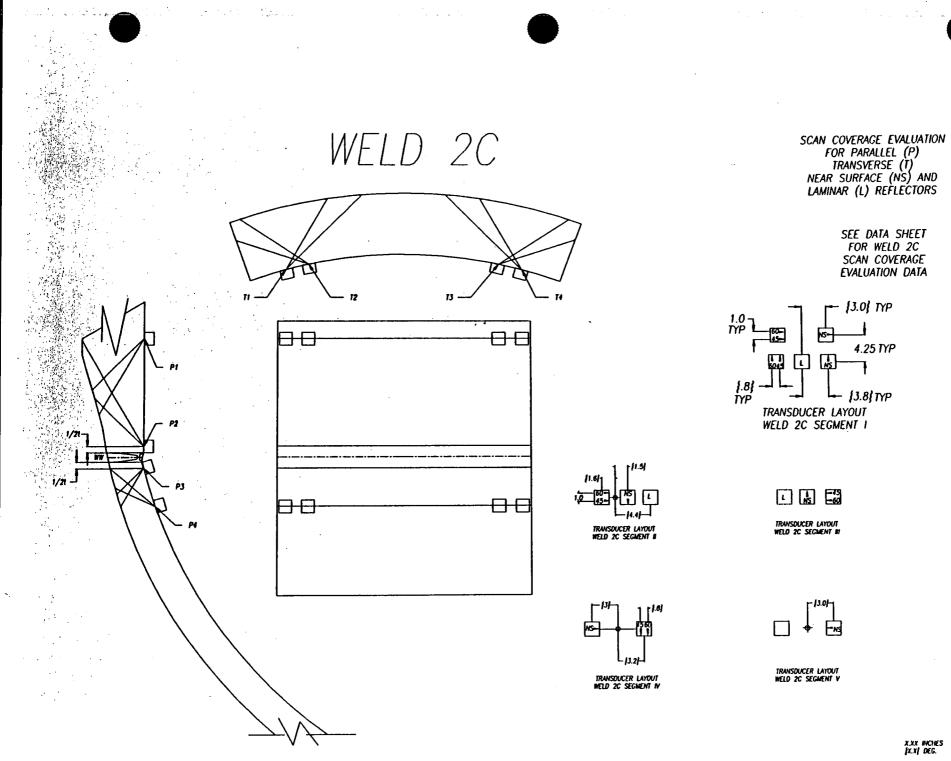
X.XX INCHES [X.X] DEG. No.: Page:

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SEGMEN	T	# 1	# 2	# 3	
	P1	42.8 deg.	42.8 deg.	42.8 deg.	
	P3.	65.1 deg.	65.1 deg.	65.1 deg.	
	P2	48.6 deg.	48.6 deg.	48.6 deg.	
	P4	74.1 deg.	74.1 deg.	74.1 deg.	
	T1	163.7 deg.	233.7 deg.	283.7 deg.	
	тз	186.7 deg.	242.7 deg.	302.7 deg.	
	Т2	177.3 deg.	237.3 deg.	297.3 deg.	
•.	<b>T4</b>	196.3 deg.	256.3 deg.	316.3 deg.	
NS&L BEG	3. X	163.7 deg.	223.7 deg.	283.7 deg.	
NS&L EN	ND X	196.3 deg	256.3 deg.	316.3 deg.	
NS&L BEC	3. Y	45.7 deg.	45.7 deg.	45.7 deg.	
NS&L E	ND Y	77.0 deg.	77.0 deg.	77.0 deg.	

WELD 1C

Scan path calculated for 372.42cm Dia. @3.25cm/deg.



No.: Page: 204ER000001 21

WELD 2	2C
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SEGMENT # I		II	III	IV	V	
·	P1					754.5cm
P3 -						771cm
	P2	12.2 deg.				
	P4	19.8 deg.		-		
	T1	357 deg.		358.5 DEG.	. ==	
•	ТЗ	187 deg.		187.5 DEG.		
. •	Т2		1.5 DEG.		<u> </u>	
	Т4		191.5 DEG.			
NS BEG. X		3 deg.	3 deg. 358.5 DEG.		357 DEG.	357 DEG.
NS END X		193 deg.	187.5 DEG.	191.5 DEG.	187 DEG.	187 DEG.
L BEG. X		3 deg.	355.5 DEG.	4.5 DEG.		
L END X		193 deg.	184.5 DEG.	194.5 DEG.		
NS BEG. Y		12.2 DEG.				
NS END Y		19.8 DEG.				
L BEG. Y		12.2 DEG				
L END Y		19.8 DEG.				42 42
ELEV. BEG.			753.5cm	753.5cm	756cm	
ELEV. END			777cm	777cm	771cm	<b>es</b> +0

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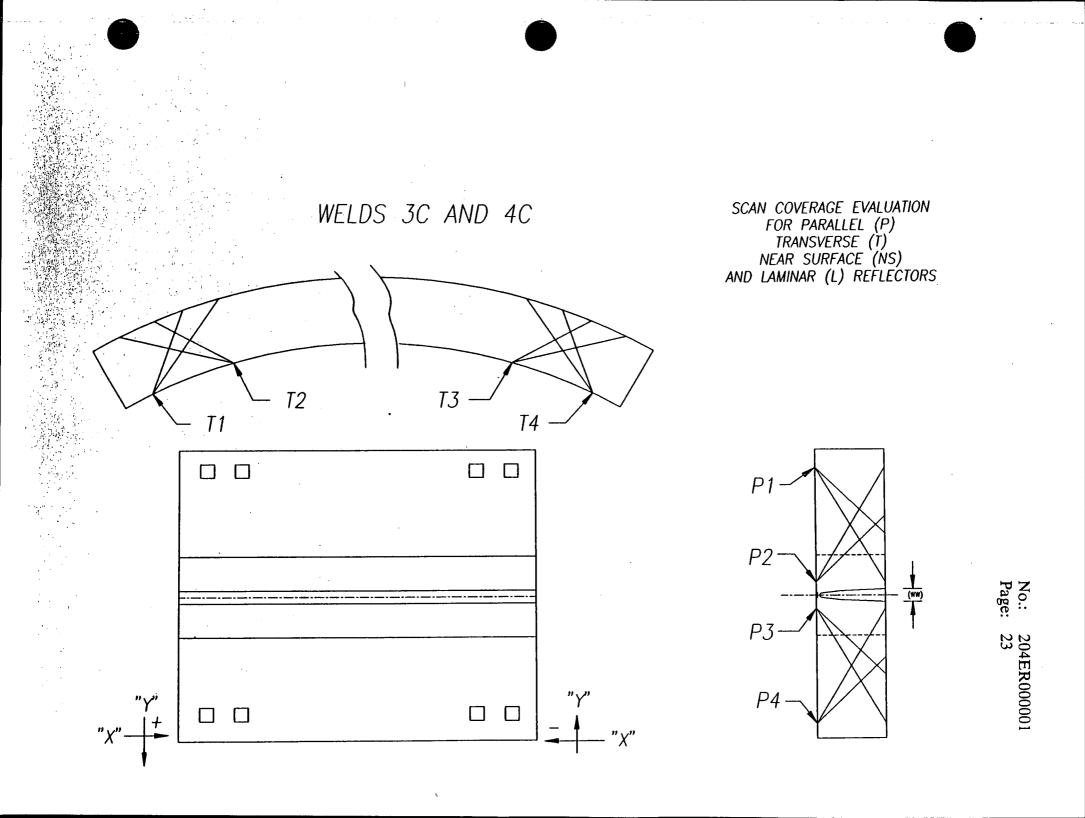
 $(a_1,a_2)$ 

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All positions include transducer offsets



WELD	30	
SEGMEN	IT	#1

	P1	616cm	
	P3	652cm	
	T2	3 deg.	ONE REVOLUTION
	Т4	364 deg.	
NS&L BE	EG. X	357 deg.	ONE REVOLUTION
NS&L EN	ND X	358 deg.	ONE REVOLUTION
NS&L BI	EG. Y	616cm	- -
NS&L EN	ID Y	652cm	

Scan path calculated for 361.47cm Dia. @3.15cm/deg. Elevation measured from surface B, CE Drawing E-201-860

#### WELD 3C

SEGMEN	SEGMENT # II			IV	Υ.	VI	VII
L	P1		652cm		652cm		652cm
	<b>P</b> 3		672cm		672cm		672cm
	P2	657cm		657cm		657cm	
	P4	712cm		712cm		712cm	
	Tl	6.0 deg.		66 deg.		126 deg.	
	T3	48 deg.		108 deg.		168 deg.	
	T2		12 deg.		72 deg.		132 deg.
	<b>T</b> 4		54 deg.		114 deg.		174 deg.
NS&L BE	G.X	12 deg.	6 deg.	72 deg.	66 deg.	132 deg.	126 deg.
NS&L EN	ID X	54 deg.	48 deg.	114 deg.	108 deg.	174 deg.	168 deg.
NS&L BI	NS&L BEG. Y 657cm		652cm	657cm	652cm	657cm	652cm
NS&L EN	TD Y	712cm	672cm	712cm	672cm	712cm	672cm

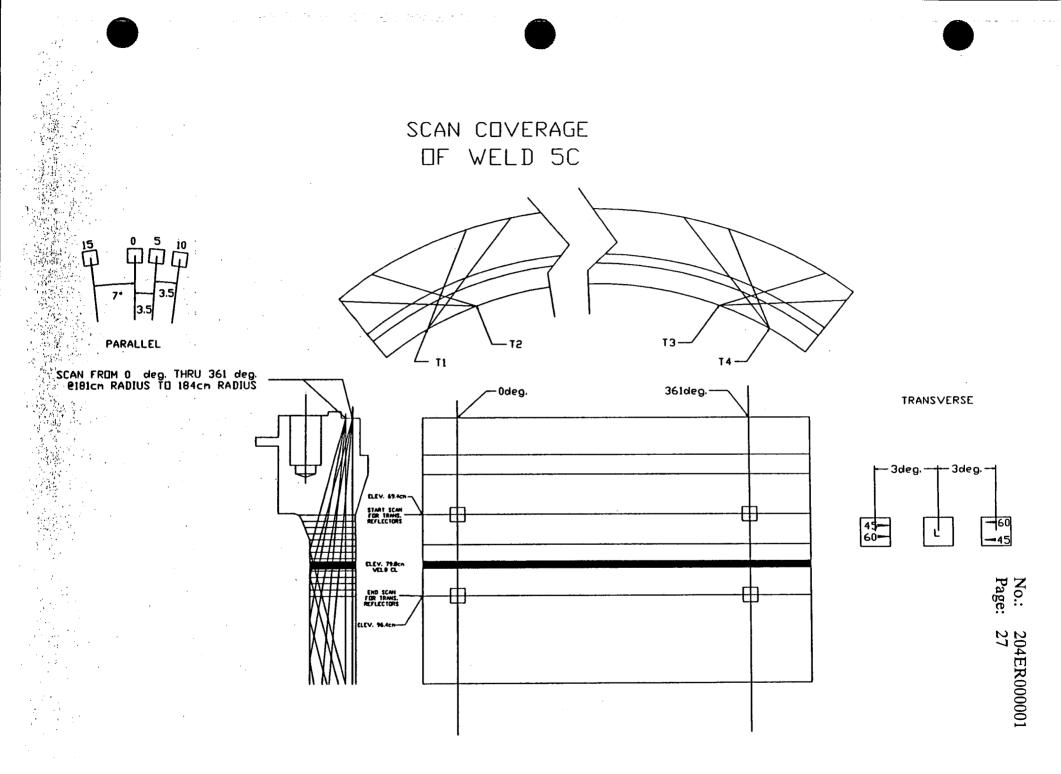
SEGMENT	#	VIII	IX	x	XI	XII	XIII
	P1		652cm		652cm		652cm
	P3		672cm		672 cm		672cm
	P2	657cm		657cm		657cm	
	P4	712cm		712cm		712cm	
	Tl	186 deg.		246 deg.		307 deg.	
	<b>T</b> 3	228 deg.		288 deg.		349 deg.	
	<b>T</b> 2		192 deg.		252 deg.		313 deg.
	T4		234 deg		294 deg.		355 deg.
NS&L BE	G. X	192 deg.	186 deg.	252 deg.	246 deg.	313 deg.	307 deg.
NS&L EN	ID X	234 deg.	228 deg.	294 deg	288 deg.	355 deg.	349 deg.
NS&L BE	G. Y	657 යා	652cm	657cm	652cm	657cm	652cm
nsel en	ID Y	712cm	672cm	712cm	672cm	712cm	672cm

Elevation measured from surface B, CE drawing E-201-860 Scan path calculated for 361.47cm Dia. @3.15cm/deg.

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	P1	327.6cm
	P3	380.4cm
	P2	370.6cm
	P4	423.3cm
	Tl	4.2 deg.
	Т3	189.4 deg.
	T2	355.8 deg.
	Т4	180.8 deg.
NS&L BE	G.X	0 deg.
NS&L END X		185 deg.
NS&L BEG. Y		327.6cm
NS&L EN	ID Y	423.3cm

WELD 4C

Scan path calculated for 361.47cm Dia @3.15cm/deg. Elevations measured from surface B, CE Drawing E-201-860





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WELD IC

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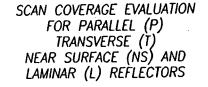
L

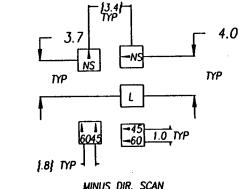
NS-

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NS 1

PLUS DIR. SCAN





MINUS DIR. SCAN

TRANSDUCER LAYOUT LONG WELDS

X.XX INCHES {X.X} DEG.

No.: Page:

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	POSICIONS IN degrees except as noted											
W	ELD#	1L	2L	3L	4L	5L	6L					
CENT	ER LINE	180	240	300	0	60	120					
	P1	163.7	223.7	283.7	343.7	43.7	103.7					
	P3	186.7	242.7	302.7	362.7	62.7	122.7					
-	P2	177	237.3	297.3	357.3	57.3	117.3					
	P4	196.3	256.3	316.3	376.3	76.3	136.3					
	<b>T1</b>	42.1	42.1	42.1	42.7	42.7	42.7					
	тз	65.1	65.1	65.1	57	57	57					
	T2	48.6	48.6	48.6	48.7	48.7	48.7					
	Т4	79.9	79.9	79.9	63	63	63					
NS&L	BEG. X	163.7	223.7	283.7	343.7	43.7	103.7					
NS&L	END X	196.3	256.3	316.3	376.3	76.3	136.3					
NS&L	, BEG. Y	45.7	45.7	45.7	45.7	45.7	45.7					
NS&L	END Y	77.7	77.7	77.7	60	60	60					

### PEEL WELDS

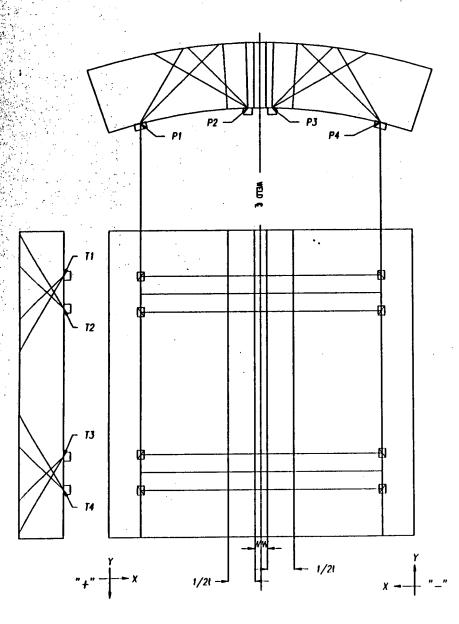
Positions in degrees except as noted

Scan path calculated for 372.42cm Dia. @3.25cm/deg.

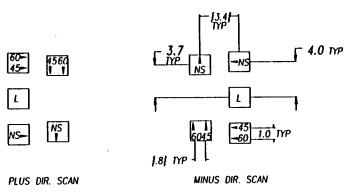
No.: 204ER000001 Page: 29

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# LONGITUDINAL WELDS 7L - 15L



SCAN COVERAGE EVALUATION FOR PARALLEL (P) TRANSVERSE (T) NEAR SURFACE (NS) AND LAMINAR (L) REFLECTORS



TRANSDUCER LAYOUT LONG WELDS

X.XX INCHES [X.X] DEG.

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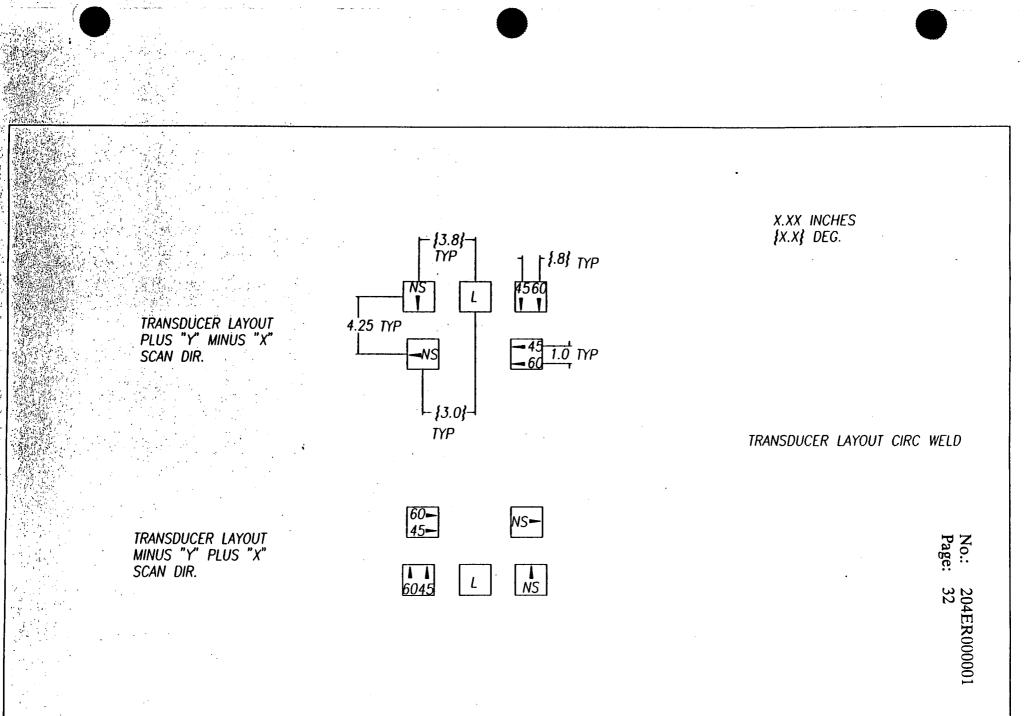
### LONGITUDINAL WELDS

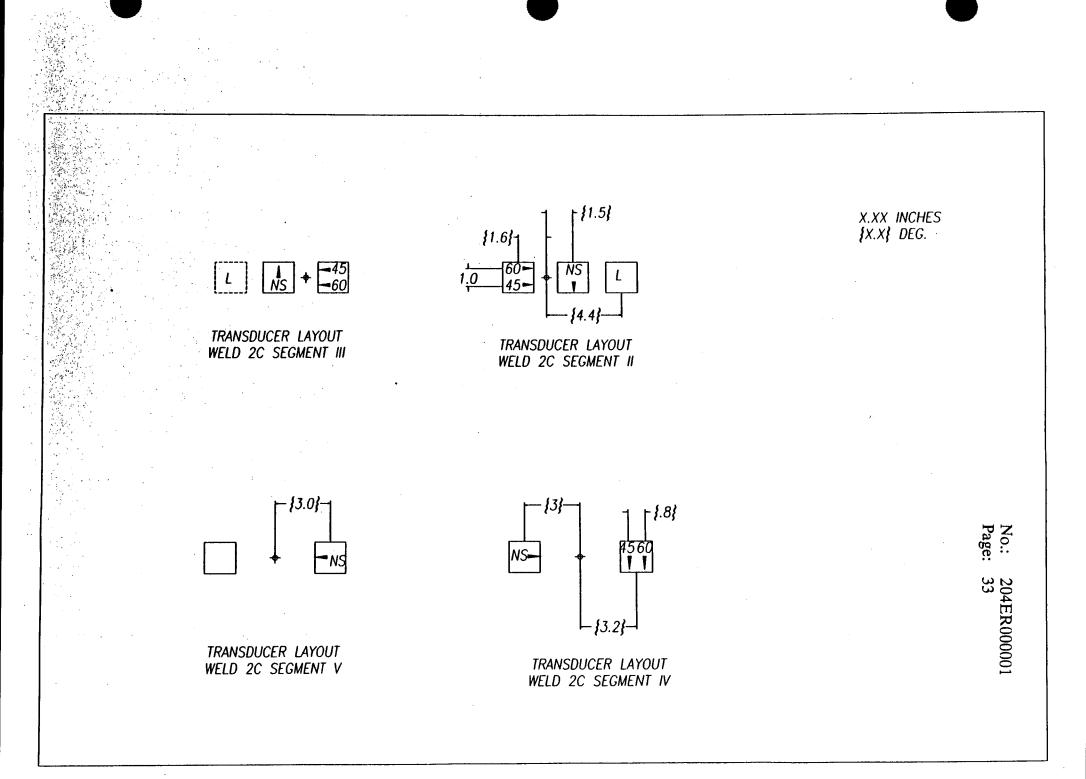
### Positions in degrees except as noted

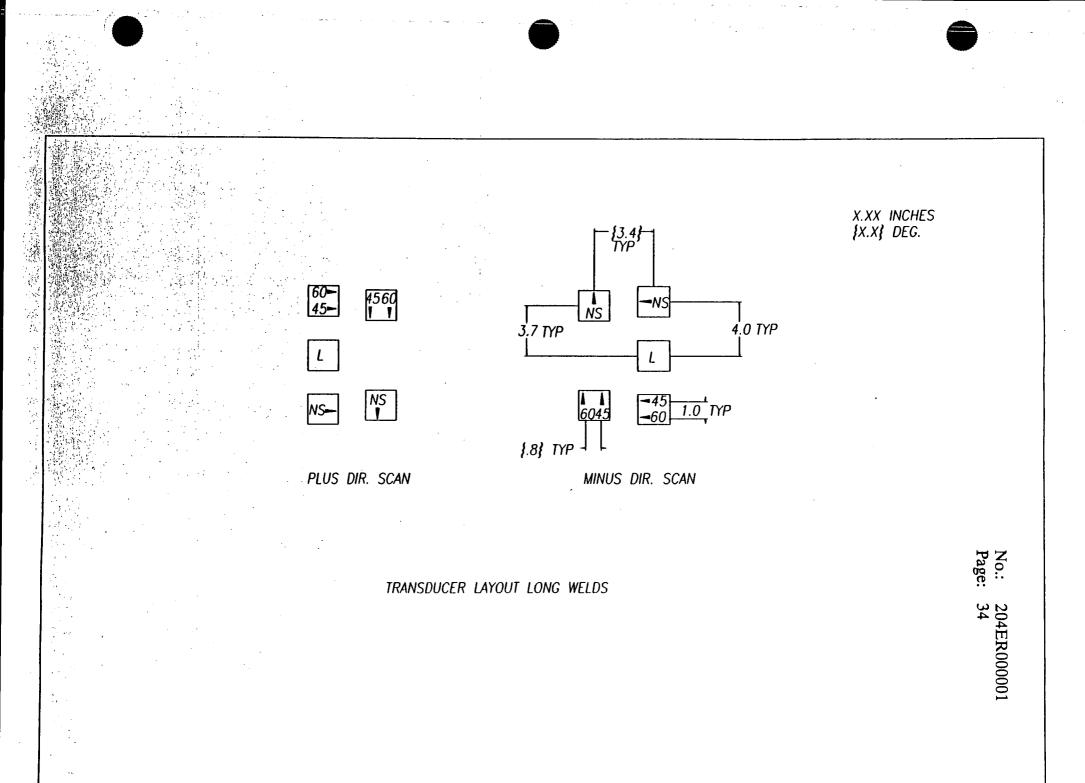
						_				
WEI	D #	7L	8L	9L	10L	11L	12L	13L	14L	15L
CENTE	ER LINE	217.5	337.5	97.5	277.5	37.5	157.5	217.5	337.5	97.5
	P1	202.4	332.4	82.3	262.4	22.3	142.4	202.4	332.4	82.3
	P3	219.1	339.1	99.1	279.1	39.1	159.1	219.1	349.1	99.1
	P2	216	336	96	276	35.9	156	216	336	95.9
	P4	232.7	352.7	113	292.7	52.6	172.7	232.7	352.7	112.7
•*	* T1	642.5	642.5	642.5	353.9	353.9	353.9	293.1	293.1	293.1
	'* T3	716.5	716.5	716.5	527.9	527.9	527.9	365.9	365.9	365.9
	* T2	661.5	661.5	661.5	372.9	372.9	372.9	312.1	312.1	312.1
	* T4	735.5	735.5	735.5	546.9	546.9	546.9	384.9	384.9	384.9
NS&L	BEG. X	202.4	332.4	82.3	262.4	22.3	142	202.4	332.4	82.3
NS&L	END X	232.7	352.7	113	292.7	52.6	172	232.7	352.7	112.7
*NS&L	BEG.Y	652	652	652	363.4	363.4	363.4	302.6	302.6	302.6
*NS&I	END Y	726	726	726	537.4	537.4	537.4	375.4	375.4	375.4

\*Measured in cm. from surface B, CE Drawing E-201-860

Scan path calculated for 361.47cm Dia. @3.15cm/deg.









TRANSDUCERS

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TRANSDUCERS

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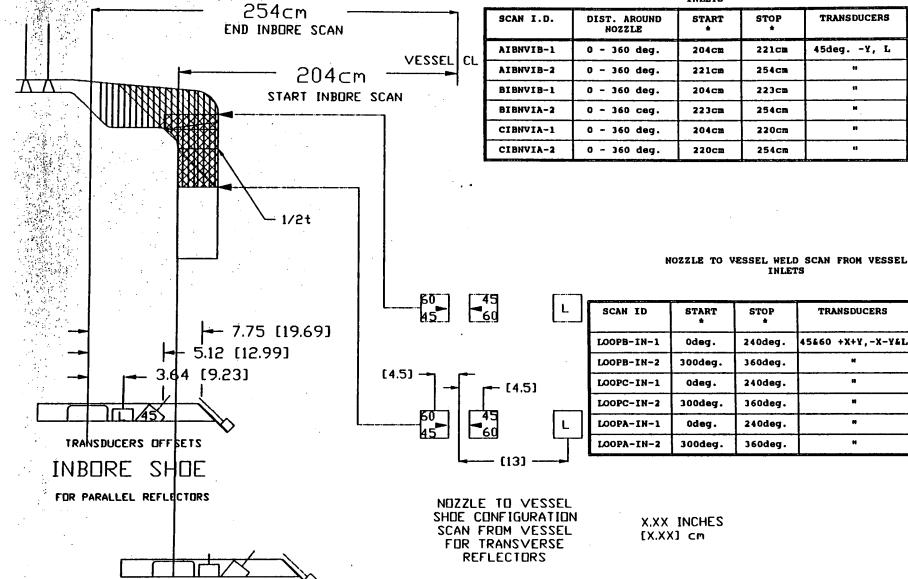
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#### NOZZLE TO VESSEL WELD SCAN FROM VESSEL OUTLETS

SCAN I.D.	START	STOP	TRANSDUCERS
LOOPA-OUT-1	Odeg.	60deg.	45660 +X+¥,-X-¥&L
LOOPA-OUT-2	120deg.	360deg.	H
LOOPB-OUT-1	Odeg.	60deg.	Ħ
LOOPB-OUT-2	120deg.	360deg.	*
LOOPC-OUT-1	Odeg.	60deg.	71
LOOPC-OUT-2	120deg.	360deg.	ti

[4.5] --

60 45 [L]

L

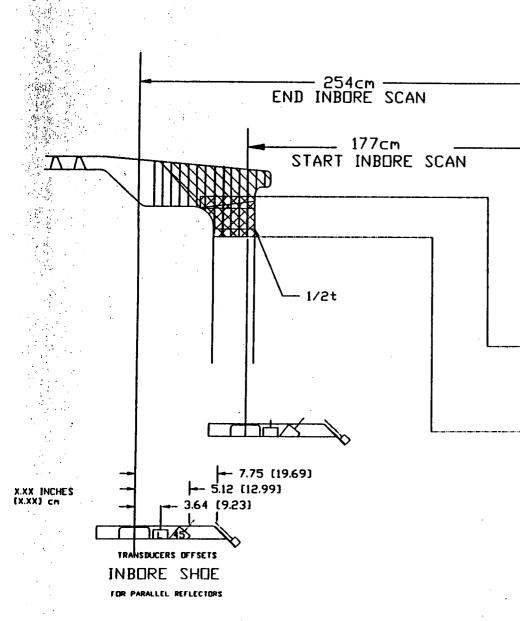
- [4.5]

- [13] -

NDZZŁE TO VESSEL SHITE CUNFIGURATION SCAN FROM VESSEL FUR TRANSVERSE REFLECTORS

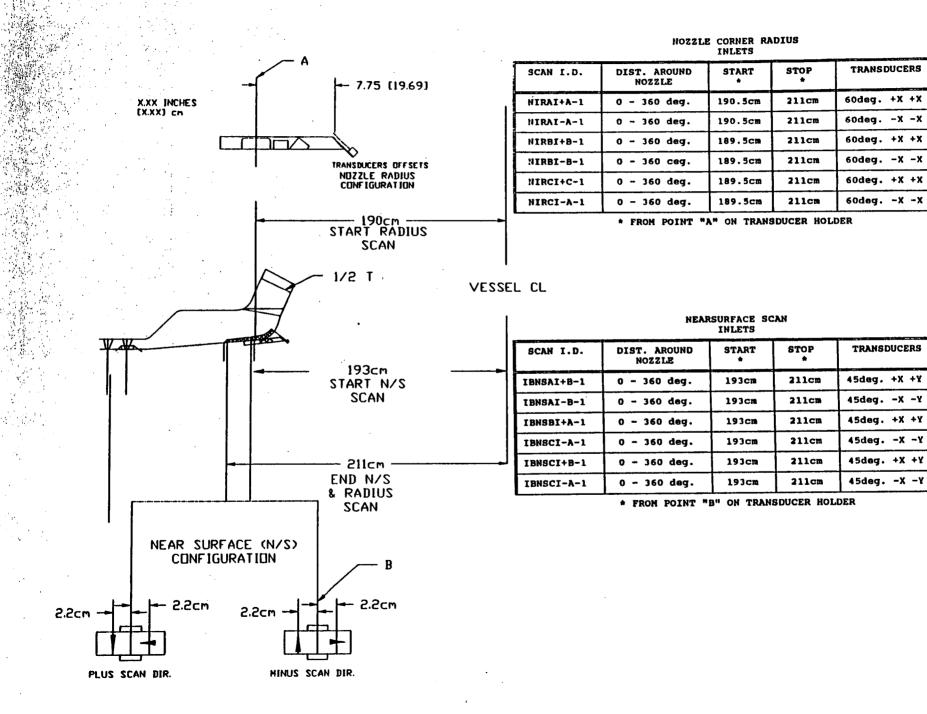
#### NOZZLE TO VESSEL WELD FROM NOZZLE OUTLETS

SCAN I.D.	DIST. AROUND Nozzle	START	STOP	TRANSDUCERS
AIBNVOC-1	0 - 360 deg.	177ca	219cm	45degY, L
AIBNVOB-1	0 - 360 deg.	219cm	254cm	tà
BIBNVOB-1	0 - 360 deg.	177cm	220cm	16
BIBNVOB-2	0 - 360 deg.	220cm	254cm	И
CIBNVOA-1	0 - 360 deg.	177cm	219.6cm	84
CIBNVOA-2	0 - 360 deg.	219.6cm	254cm	11

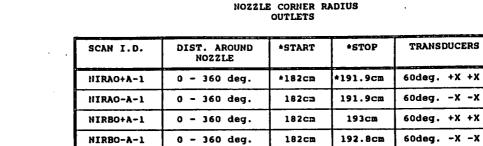








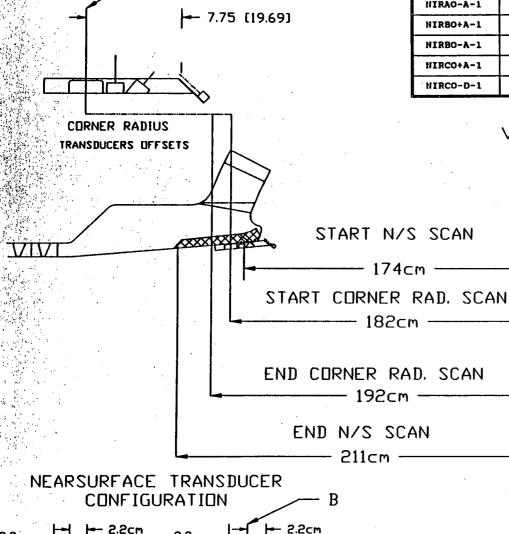
No.: Page: 204ER000001 37



0 - 360 deg.

0 - 360 deg.

VESSEL CL



2.2cm -

MINUS SCAN DIR.

2.2cm -

PLUS SCAN DIR.



NEAR SURFACE SCAN OUTLETS

60deg. +X +X

60deg. -X -X

191cm

191cm

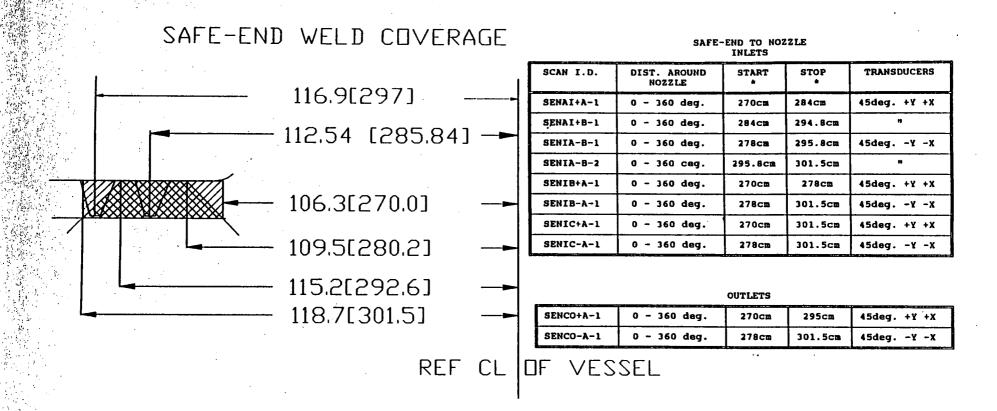
181cm

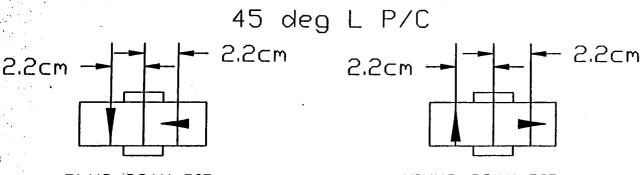
181cm

\* FROM POINT "A" ON TRANSDUCER HOLDER

SCAN I.D.	DIST. AROUND Nozzle	*START	*STOP	TRANSDUCERS
IBNSA0+A-1	0 - 360 deg.	174cm	211cm	45deg. +X +Y
IBNSAO-A-1	0 - 360 deg.	174cm	211cm	45degX -Y
IBNSBO+B-1	0 - 360 deg.	174cm	211cm	45deg. +X +Y
IBNSOC-B-1	0 - 360 deg.	174cm	211cm	45degX -Y
IBNSC+B-1	0 - 360 deg.	174cm	211cm	45deg. +X +Y
IBNSCO-C-1	0 - 360 deg.	174cm	211cm	45degX -Y

\* FROM POINT "B" ON TRANSDUCER HOLDER





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PLUS SCAN DIR.

MINUS SCAN DIR.

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# **APPENDIX B**

# **EXAMINATION REFERENCE TABLES**

	SCAN ID	DATA FILE NUMBER	DATA TAPE	CALIBRATION BLOCK **	EXAM DATE	REMARKS
		VESSEL CIRC	JMFERENTIAL WE	LDS		
WELD 1C	1LA+1C+1	SC0009	SOT001	A	8-4-90	
	1LA-1C-1	SC0016	SOT001	Ä	8-4-90	
	2LA+1C+1	SC0010	SOT001	A	8-4-90	
	2LA-1C-1	SC0015	SOT001	٨	8-4-90	
	3LA+1C+1	SC0011	SOT001	Α	8-4-90	
	3LA-1C-1	SC0014	SOT001	Α	8-4-90	
	1LA-1C-1	sc0016	SOT001	A	8-4-90	
WELD 2C	2C+X-1	SC0095	SOT002	A,B	8-9-90	
	2C+Y-3	SC0107	SOT002	B	8-10-90	
	2C-X-1	SC0096	SOT002	A,B	8-9-90	
	2C-Y-1	SC0108	SOT002	B	8-10-90	
	2CB+1	SC0020	SOT001	А,В	8-4-90	
WELD 3C	3CA-1	SC0028	SOT001	A,B	8-5-90	
	3CB-2	SC0030	SOT001	А,В	8-5-90	
	3CC-1	SC0031	SOT001	А,В	8-5-90	
	300-2	SC0033	SOT001	A,B	8-5-90	
	3CE-1	SC0034	SOT001	A,B	8-5-90	
	3CF-1	SC0035	SOT001 SOT001	A,B	8-5-90 8-6-90	
	3CG+1	SC0036	SOTOO1	A,B	8-6-90	
,	3CA+1 3CB+1	SC0037 SC0038	SOTOO1	A,B A,B	8-6-90	
	300+1	SC0038	SOTOO1	A,B	8-6-90	
	300+1	SC0040	SOTOO1	A,B	8-6-90	
	3CE+1	SC0041	SOT001	A,B	8-6-90	
	3CF+1	SC0042	SOT001	A,B	8-6-90	
WELD 4C	4CA-1	SC0026	SOT001	A,B	8-5-90	
	4CA-2FG	SC0025	SOT001	A, B	8-5-90	
	4CA+5	SC0025	SOT001	Â,B	8-5-90	
				_		
WELD 5C	5CTA2	SC0081	SOT002	A	8-8-90	
	50	SC0001	SOT001	C	8-2-90	
		VESSE	L SUPPORTS			
SUPPORT 15 (82.5°)	VSC-1	SC0102	SOT002	A	8-10-90	
CUDDODT 20 /303 EP+	100A - 4	000404		-	• • • • •	
SUPPORT 2S (202.5°)	VSA-1 VSA-FG2	SC0101 SC0104	SOT002 SOT002	- • •	8-10-90	
				► .	8-10-90	
SUPPORT 3S (322.5°)	VSB-1	SC0102	SOT002	•• <b>A</b>	8-10-90	
		VESSEL LON	GITUDINAL WELI	<u>os</u> ,		
WELD 1L	1LA+1C+1	SC0009	SOT001	A,B	8-4-90	· ·
	1LA-1C-1	SC0016	SOT001	A, B	8-4-90	
IELD 1L	1LA+1C+1	SC0009	SOT001	A,B	8-4-90	
	1LA-1C-1	SC0016	SOT001	A,B	8-4-90	• •
FLD 2L	2LA+1C+1	660040	007444			
nter tt	2LA-1C-1	SC0010	SOT001	A,B	8-4-90	
	6LR-16-1	SC0015	SOT001	A,B	8-4-90	

AUT EXAMINATION REFERENCE TABLES, SONGS UNIT 1, 1990

CALIBRATION BLOCK IDENTIFICATION CODE: A = UT-74, B = 444000038, C = ALA-RV-2,

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D = 444000065. E = CB0005

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EXAMINATION	SCAN ID	DATA FILE NUMBER	DATA TAPE	CALIBRATION BLOCK	EXAM DATE	REMARKS
		VESSEL LON	GITUDINAL WEL	DS		
1516 <b>7</b> 1	3LA+1C+1	SC0011	SOT001	A,B	8-4-90	
ELD 3L	3LA-1C-1	SC0014	SOTO01	A,B	8-4-90	
JELD 4L	4LA+1	SC0012	SOT001	A,B	8-4-90	
iclu 4L	4LA-1	SC0013	SOT001	A,B	8-4-90	
VELD 5L	5LA+1	SC0007	SOT001	A,B	8-4-90	
	5LA-1	SC0018	SOT001	A,B	8-4-90	
WELD 6L	6LA+1	SC0008	SOT001	A,B	8-4-90	
	6LA-1	SC0017	SOT001	A,B	8-4-90	
JELD 7L	7LA+1	SC0047	SOT001	A,B	8-6-90	
-	7LA-1	SC0048	SOT001	A,B	8-6-90	
	7LA-2	SC0049	SOT001	А,В	8-6-90	
WELD 8L	8LA+1	SC0052	SOT001	A,B	8-7-90	
	8LA-1	SC0050	SOT001	A,B	8-6-90	
	8LA-2	SC0051	SOT001	А,В	8-7-90	
JELD 9L	9LA+1	SC0044	SOT001	A,B	8-6-90	
	9LB-1	SC0046	SOT001	A,B	8-6-90	
	9LB-2	SC0053	SOT001	Α,Β	8-7-90	
WELD 10L	10LA+1	SC0065	SOT001	A,B	8-7-90	
	10LB-1	SC0061	SOT001	A,B	8-7-90	
WELD 11L	11LA+1	SC0054	SOT001	A,B	8-7-90	
	11LA-1	, sc0055	SOT001	A,B	8-7-90	
WELD 12L	12LA+1	SC0058	SOT001	A,B	8-7-90	
	12LA+2	SC0097	SOT002	A,B	8-9-90	
	12LA-1	SC0060	S0T001	А,В	8-7-90	
WELD 13L	13LA+1	SC0070	SOT001	A,B	8-7-90	
	13LA-1	SC0069	SOT001	А,В	8-7-90	
WELD 14L	14LA+1	SC0066	SOT001	A,B	8-7-90	
	14LA-1	SC0067	SOT001	А,В	8-7-90	
WELD 15L	15LA+1	SC0071	SOT002	A,B	8-7-90	
	15LA-1	SC0072	SOT002	А,В	8-7-90	
		LOOP A INL	ET NOZZLE (28	<u>5°)</u>		
NOZZLE TO VESSEL	LOOPA-IN-1	SC0082	SOT002	A	8-8-90	partial
WELD (FROM SHELL)	LOOPA-IN-2	SC0083	SOT002	_ <b>A</b>	8-8-90	partial
NOZZLE TO VESSEL	AIBNVIB-1	SC0117	SOT002	A	8-13-90	
WELD (INBORE)	AIBNVIB-2	SC0118	SOT002	A	8-13-90	
NOZZLE INSIDE	IBNSAI+B-1	SC0163	S0T002	B	8-15-90	
RADIUS SECTION	IBNSAI-B-1	SC0164	SOT002	B	8-15-90	
•	NIRAI+A-1 NIRAI-A-1	SC0166 SC0165	SOT002 SOT002	D D	8-15-90 8-15-90	
NOZZLE TO SAFE END &		SC0121	SOT002	_		
SAFE END TO PIPE WELDS	SENAI+A-1 SENAI+B-1	SC0121 SC0122	S01002 S01002	E E	8-13-90 8-13-90	F
	SENAI-B-1	SC0123	S01002	E	8-13-90	
	SENAI+B-2	SC0124	SOT002	Ē	<b>- 7</b> 4	/ partidta

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EXAMINATION	SCAN ID	DATA FILE NUMBER	DATA TAPE	CALIBRATION BLOCK	EXAM DATE	REMARKS		
		LOOP A OUTL	ET NOZZLE (24	<u>0°)</u>				
	1 000 A - 01 IT - 1	SC0084	SOT002	٨	8-8-90	partial		
NOZZLE TO VESSEL JELD (FROM SHELL)	LOOPA-OUT-1 LOOPA-OUT-2	SC0085	SOTOO2	Ä	8-8-90	partial		
NOZZLE TO VESSEL	AIBNVOC-1	SC0130	SOT002	A	8-12-90			
ELD (INBORE)	AIBNVOB-2	sco131	SOT002	A	8-12-90			
OZZLE INSIDE	IBNSAO+A-1	sc0177	SOT003	8	8-15-90			
RADIUS SECTION	IBNSAO-A-1	SC0178	SOT003	B	8-15-90			
	NIRAO+A-1	SC0176	SOT003	Å	8-15-90			
	NIRAO-A-1	SC0175	SOT003	A	8-15-90			
		LOOP B INL	ET NOZZLE (45	<u>°)</u>				
NOZZLE TO VESSEL	LOOPB-IN-1	SC0087	SOT002	A	8-9-90	partial		
WELD (FROM SHELL)	LOOPB-IN-2	SC0088	SOT002	Ä	8-9-90	partial		
NOZZLE TO VESSEL	BIBNVIB-1	SC0130	SOT003	A	8-14-90			
WELD (INBORE)	BIBNVIB-2	SC0131	SOT003	A	8-14-90			
OZZLE INSIDE	IBNSBI+A-1	SC0132	SOT 003	В	8-14-90			
RADIUS SECTION	IBNSBI-A-1	SC0133	SOT003	В	8-14-90			
	NIRBI+8-1	SC0162	SOT003	D	8-14-90			
	NIRBI-8-1	SC0160	SOT003	D	8-14-90			
NOZZLE TO SAFE END &	SENBI+A-1	SC0158	SOT003	E		partial		
SAFE END TO PIPE WELDS	SENBI-A-1	SC0157	SOT003	E	8-15-90	partial	SEP	
		LOOP B OUT	LET NOZZLE (O	<u>•)</u>				
NOZZLE TO VESSEL	LOOPB-OUT-1	SC0086	SOT002	Α.	8-9-90	partial		
WELD (FROM SHELL)	LOOPB-OUT-2	SC0089	S0T002	•	8-9-90	partial		
NOZZLE TO VESSEL	BIBNVOB-1	SC0125	SOT003	٨	8-13-90			
HELD (INBORE)	818NV08-2	SC0126	SOT003	A	8-13-90			
OZZLE INSIDE	IBNSBO+A-1	SC0129	SOT003	8	8-13-90			
RADIUS SECTION	IBNSBO-A-1	SC0128	SOT003	B	8-13-90			
	NIRBO+A-1	SC0173	SOT003	Α	8-15-90			
	NIRBO-A-1	SC0174	SOT003	· • •	8-15-90			
		LOOP C INLE	T NOZZLE (165	<u>;•)</u>				
NOZZLE TO VESSEL	LOOPC-IN-1	SC0092	SOT002	Α.	8-9-90	partial		
HELD (FROM SHELL)	LOOPC-IN-2	SC0093	SOT002	Ä		partial		
OZZLE TO VESSEL	CIBNVIA-1	SC0146	SOT003	Α.	8-14-90			
ELD (INBORE)	CIBNVIA-2	SC0147	SOT003	_ <b>A</b>	8-14-90			
NOZZLE INSIDE	IBNSCI+B-1	SC0150	S0T003	B	8-15-90			
RADIUS SECTION	IBNSCI-C-1	SC0149	SOT003	B	8-15-90			
	NIRCI+C-1	SC0153	SOT003	D	8-15-90			
	MIDAI 4 4	SC0154	SOT003	D	8-15-90			
	NIRCI-A-1	300134			0 13 70			
IOZZLE TO SAFE END & AFE END TO PIPE WELDS	SENIC+A-1 SENIC-A-1	SC0155 SC0156	SOT003 SOT003	E	8-15-90	partial partial	SEN.	S

EXAMINATION	SCAN ID	DATA FILE NUMBER	DATA TAPE	CALIBRATION BLOCK	EXAM DATE	REMARKS
		LOOP C OUTL	ET NOZZLE (12	<u>0°)</u>		
NOZZLE TO VESSEL	LOOPC-OUT-1	SC0090	S0T002	A	8-9-90	partial
WELD (FROM SHELL)	LOOPC-OUT-2	SC0091	SOT002	A	8-9-90	partial
NOZZLE TO VESSEL	CIBNVOA-1	SC0134	SOT003	A	8-14-90	
WELD (INBORE)	CIBNVOA-2	SC0135	SOT003	A	8-14-90	
NOZZLE INSIDE	IBNSCO+8-1	SC0140	SOT003	B	8-14-90	
RADIUS SECTION	IBNSCO-C-1	SC0138	SOT003	B	8-14-90	
· · · · · · · · · · · · · · · · · · ·	NIRCO+A-1	SC0145	SOT003	A	8-14-90	
	NIRCO-D-1	SC0144	SOT003	A	8-14-90	
NOZZLE TO SAFE END &	SENCO+A-1	SC0168	SOT003	E		partial SEP
SAFE END TO PIPE WELDS	SENCO-A-1	SC0167	SOT003	E	8-15-90	partial SEP

MUT.	MT.	$\mathbf{PT}$	&	VT	EXAMINATION	REFERENCE	TABLES,	SONGS	UNIT	1,	1990

		the second se				
EXAMINATION	REPORT NUMBER	EXAM METHOD	EXAMINATION PROCEDURE SO1-XXVII-	EXAM DATE		REMARKS
,			LOOP A			
INLET NOZZLE - SAFE END	00-CCE-DT-003	PT	22.5	7-8-90	PARTIAL	
	90-SCE-PT-003	PT	22.5	7-8-90	PARTIAL	
DUTLET NOZZLE - SAFE END		PT	22.5	7-8-90	PARTIAL	
	90-SCE-PT-003	PT	22.5	7-8-90	PARTIAL	
			LOOP B			
INLET NOZZLE - SAFE END	90-SCE-PT-2	PT	22.5	7-8-90		
	90-SCE-PT-2	PT	22.5	7-8-90	PARTIAL,	RECORDABLE INDICATION
OUTLET NOZZLE - SAFE END		PT	22.5	7-8-90	PARTIAL	
	90-SCE-PT-2	PT	22.5	7-8-90	PARTIAL,	RECORDABLE INDICATION
			LOOP C			
				_		
INLET NOZZLE - SAFE END	90-SCE-PT-1	PT	22.5	7-8-90	• • • • • • • • • • • • • • • • • • • •	
INLET SAFE END - PIPE	90-SCE-PT-1	PT	22.5	7-8-90		
OUTLET NOZZLE - SAFE END	90-SCE-PT-1	PT	22.5	7-8-90	PARTIAL	
OUTLET SAFE END - PIPE	90-SCE-PT-1	PT	22.5	7-8-90	PARTIAL	
			MAIN_STEAM			
REDUCER TO VALVE # CV-76	00-SCE-UT-001	NUT	22.7	7-14-90		
REDUCER TO VALVE # CV-76		MUT	22.7	7-14-90		
REDUCER TO VALVE # CV-76		NUT	22.7		GEOMETRY	
	00-005-117-001	` N# 17	22.7	7-14-90		
REDUCER TO VALVE # CV-77		(HUT	22.7	7-14-90		
REDUCER TO VALVE # CV-77 REDUCER TO VALVE # CV-77		MUT MUT	22.7		GEOMETRY	
	00-005 117 004	18 17		7 4/ 00		
REDUCER TO VALVE # CV-78		MUT	22.7 22.7	7-14-90		
REDUCER TO VALVE # CV-78 REDUCER TO VALVE # CV-78		MUT	22.7	7-14-90	GEOMETRY	
KEDULEK IU VALVE # LV-70	90=5CE-01-003	MUT	22.1	7-14-90	GEUREIKI	
REDUCER TO VALVE # CV-79	90=SCE-UT-001	MUT	22.7	7-14-90		
REDUCER TO VALVE # CV-79		HUT	22.7	7-14-90		
REDUCER TO VALVE # CV-79	90=SCE-UT-003	MUT	22.7	7-14-90	GEOMETRY	,
			CLOSURE_HEAD			
WELD 6C FROM STUD HOLE	90-SCE-UT-004	NUT	22.6	7-22-90		
	90-SCE-UT-005	MUT	22.6		PARTIAL	
	90-SCE-UT-006	MUT.	22.6	7-22-90	PARIIAL	
CRDM WELD #59	90-SCE-UT-007	MUT	22.7	7-23-90		
	90-SCE-UT-008	NUT	22.7		GEOMETRY	, · · ·
	90-SCE-UT-009	NUT	22.7	7-27-90	GEOMETIKT	
RPV STUDS #29 TO #42	90-SCE-UT-010	NUT	22.1	7_20_00		
···· ······ #6/ 10 #76	90-SCE-MT-002	MT		7-30-90		
	74-346-MI-002		22.10	7-30-90		
	00-SCE-HT-011	1 T T				
RPV NUTS #29 TO #42	90-SCE-UT-011 90-SCE-MT-001	NUT -	22.1	8-2-90	040714	
RPV NUTS #29 TO #42	90-SCE-UT-011 90-SCE-MT-001 90-SCE-VT-007	MUT MT VT	22.1 22.10 22.8		PARTIAL	

No.: 204 Page: 46 204ER000001

EXAMINATION	NUMBER METHOD PROCEDURE			EXAM DATE	REMARKS			
			RPV INTERNALS					
RPV INTERIOR	90-SCE-VT-006	VT	22.4	7-30-90	TAPE #2. includes cladding patches			
UPPER GUIDE STRUCTURE ASSEMBLY	90-SCE-VT-003	VT	22.4	7-28-90	TAPE #1			
CORE BARREL INTERIOR	90-SCE-VT-006	VT	22.4	7 <b>-3</b> 0-90	TAPE #1			
CORE BARREL EXTERIOR	90-SCE-VT-016 90-SCE-VT-018	VT VT	22.4 22.4		TAPE #2, RECORDABLE INDICATION TAPE #3, RECORDABLE INDICATION			

MUT, MT, PT, VT EXAMINATION SUMMARY FOR SONGS UNIT 1, 1990





















## **APPENDIX C**

# **ROCKWELL'S AUTOMATED ULTRASONIC INSPECTION SYSTEM**

## A. ROCKWELL'S AUTOMATED ULTRASONIC INSPECTION SYSTEM

Rockwell's automated ultrasonic inspection system is made up of four main parts:

- 12. 1) The control console
- 13. 2) The PaR ISI-2 remote manipulator
- 14. 3) The ultrasonic search units
- 15. 4) The automated control software

The control console and the positioning device are shown schematically in Figures C-1 and C-2 respectively. Inspection fixtures (or heads) containing several ultrasonic search units are configured for each type of weld inspection. The head is mounted on the PaR positioning device so that it can be remotely guided over the region to be examined. The control software guides the manipulator over the test specimen and collects the ultrasonic data. It alerts the examiner to any possible flaws and records significant data about these possible flaws. The examiner reviews this data and determines the significance of the indications.

### 1. The Control Console

The control console provides both manual and automated control of the PaR positioning device and the ultrasonic signal system. The control console is connected to the Par manipulator through the mechanical control chassis (MCC). The MCC displays the current position of each of the PaR's six motor drives and allows the operator (or computer) to reposition the PaR as needed. In the manual mode, the operator has full control of the inspection system. This allows the operator to conduct remote manual ultrasonic and visual examinations. Normally, ultrasonic examinations are performed under computer control (automated mode).

Under automated control, the computer uses information input by the console operator to perform several functions. The computer moves the inspection head over the area being examined, takes ultrasonic (UT) data, stores the UT data collected and alerts the operator to any indications that may indicate the presence of a flaw. The automated system is controlled by a Digital Equipment Co. (DEC) PDP-11/34 mini- computer running Rocketdyne developed software. The computer is connected to several subsystems that allow it to perform the required control functions.

The computer is connected to the PaR positioning device through the MCC (mentioned above). The MCC provides the computer with position information on each of the six motor drives. It also allows the computer to move any of the motor drives to a new position when the MCC is in the "automatic" mode. This allows the computer to move the inspection head to the position where it will collect UT data. The computer uses the Ultrasonic Signal System (UTSS) to acquire data from a particular search unit on the inspection head. Each search unit is connected to its own pulser/receiver module in the UTSS. Each pulser/receiver module contains its own gain control and distance amplitude correction (DAC) circuitry. The computer can elect to acquire data from any one of twelve pulser/receiver modules in the system. During an examination, the computer uses high speed multiplexing to select and acquire data form each search unit. Although up to twelve search units may collect UT data during the examination, only one search unit is active at a time. When selected, the pulser/receiver module pulses the ultrasonic transducer in the search unit and then collects and amplifies the returning UT signal. The UT signal is displayed on an analog UT scope in A-scan form. It is also passed to the analog-to-digital converter, which converts it to digital form and transfers it to the computer.

Once in the computer, the ultrasonic data is analyzed to determine if any of the detected indication amplitudes exceed either of two preset threshold values. These thresholds are set by console operator input during system calibration. All indications with amplitudes exceeding the "data save" threshold (typically 10% of reference) are recorded, along with their associated position and depth information, into a UT data (UTD) file. This file can be transferred to magnetic tape or to optical disk for permanent storage. This low amplitude data may be analyzed at a later date as required. All indications with amplitudes exceeding the "alert" threshold level (typically 20% or 50% of reference) are stored in a summary data (SUM) file along with the associated position and depth information. This summary data file is printed at the conclusion of the scan. These indications are then evaluated for relevancy by a certified level II or III ultrasonic examiner. Indication evaluation is accomplished by manually positioning the inspection head over the response area and reviewing the surface conditions and the ultrasonic signals on the analog display scope.

### 2. The PaR Positioning Device

Rocketdyne utilizes a Programmed and Remote Systems (PaR) ISI-2 polar manipulator as the positioning device for internal pressure vessel examinations. This manipulator was designed to examine welds in reactor pressure vessels. Its tripod legs rest on the vessel flange and clamp onto the vessel head locating studs. The PaR has six motor drives that provide the necessary positioning to examine all the welds in the reactor pressure vessel, see figure C-3. Optical encoders provide the control console with position information on each of the six motor drives.

Vertical positioning is provided by the "Hoist" telescoping tube assembly. Movement is measured in centimeters from the vessel flange, positive down into the reactor vessel. Azimuthal positioning is provided by the "Boom Rotate" drive. Movement is measured in degrees clockwise (looking down on the vessel) from the vessel zero location. This drive rotates both of the PaR's inspection booms. The "Boom Extend" drive is a telescoping tube assembly providing radial positioning from the vessel centerline. Movement is measured in centimeters from the vessel centerline. The "Pivot Boom" (or Pivot Arm) drive provides angular positioning at a right angle to the Boom Rotate drive. It is used for bottom head examinations. Movement is measured in degrees from horizontal. The PaR also uses two modular drive units that may be mounted on either inspection boom. The "Fixture Rotate" drive provides rotational positioning perpendicular to the inspection boom. This is used for in-bore nozzle examinations. Its movement is measured in degrees. The second modular drive is the "Fixture Extend" drive. This is a telescoping tube assembly providing radial positioning, typically mounted on the Pivot Boom. Movement is in centimeters measured from the vessel centerline.

The PaR positioning device is very accurate. It is capable of resolving 0.01 degrees of vessel azimuth and 1 millimeter in elevation. Over the distances involved in sizing detected indications, the accuracy of the indication size is estimated to be +/-1 millimeter in each dimension.

### 3. Ultrasonic Search Units

Ultrasonic search units are specific to each type of examination performed. Normally several search units are used for each examination to provide the required ASME Code and Regulatory Guide coverage. During the SONGS Unit 1 ISI, various types of search units were used.

The vessel shell welds were examined using 0, 45, 60 and 70 degree UT beams. The zero degree L-wave was a one inch diameter, water path, pulse echo search unit. The 45 and 60 degree angle beams were one inch square, pulse/echo, shear wave search units. The 70 degree angle beam was a one inch square, pitch/catch, longitudinal wave search unit, used for near surface examinations. The flange-to- vessel shell weld was also examined from the flange surface using four, one inch square, refracted L-wave search units (0, 5, 10 and 15 degree).

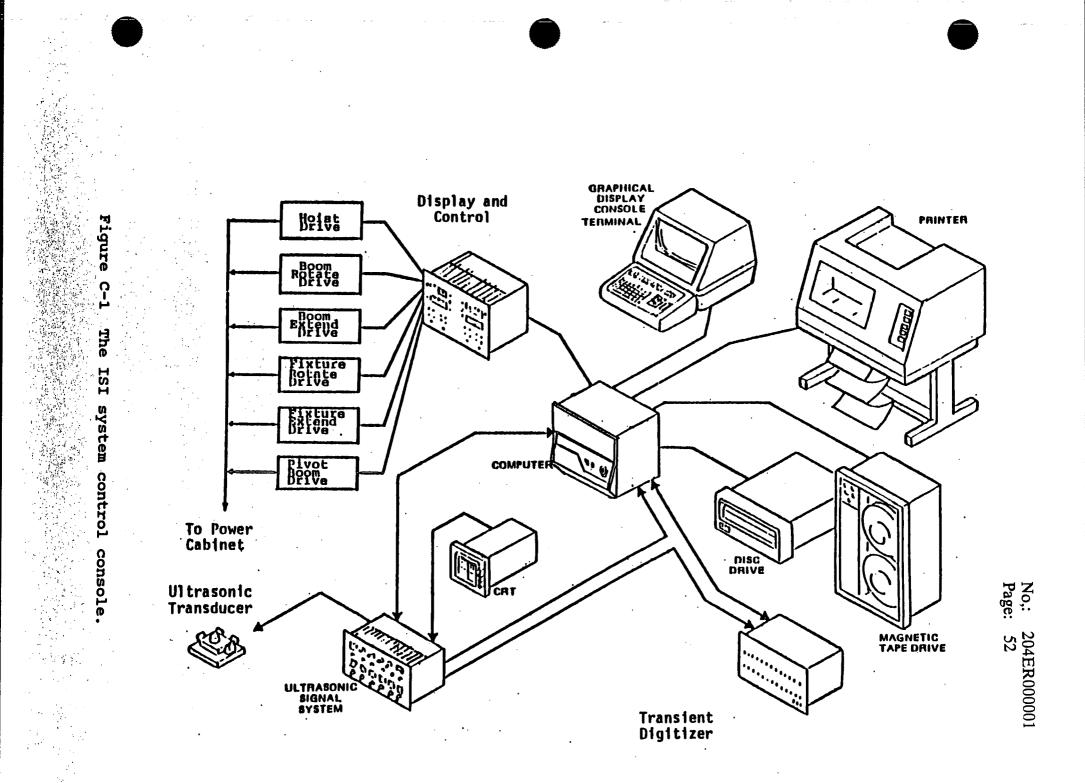
The vessel supports were examined using a zero degree, water path, one inch diameter, pulse/echo search unit.

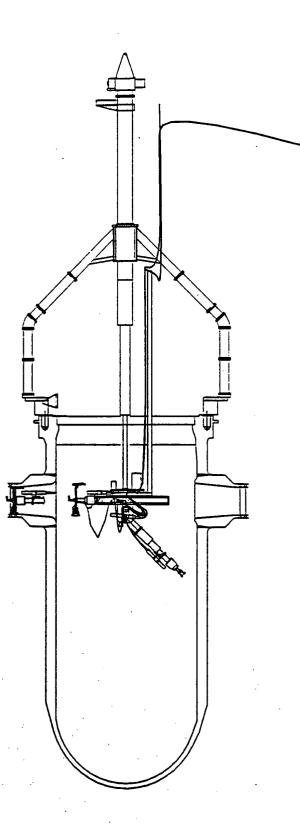
The nozzle-to-vessel welds were examined from both the vessel shell surface and from the nozzle inbore surface. The same 0, 45 and 60 degree search units used for examining the shell welds were used to inspect the nozzle-to-vessel welds from the shell surface (transverse reflectors). A contact, one inch square, five degree, refracted L- wave was used to perform the primary examination from the nozzle inbore surface (parallel reflectors). A refracted L-wave was used to orient the UT beam perpendicular to the weld (compensating for the nozzle taper). A one inch square, 45 degree, shear wave search unit was also used from the nozzle inbore surface. The 45 degree beam was used to

supplement the L-wave examination in areas where the L-wave coverage was incomplete, because of nozzle geometry.

The nozzle inside radius was examined using one-half inch diameter, pulse/echo, water path, 60 degree, shear wave search units.

The nozzle inbore near surface (the inner radius section excluding the radius) and the nozzle safe end welds were examined with a water path, pitch/catch, refracted longitudinal wave technique. This technique uses 1/2 inch diameter transducers oriented to produce a 45 degree, longitudinal wave in the part.





ROCKETDYNE'S PaR MANIPULATOR

Figure C-2 The Programmed and Remote (PaR) manipulator.

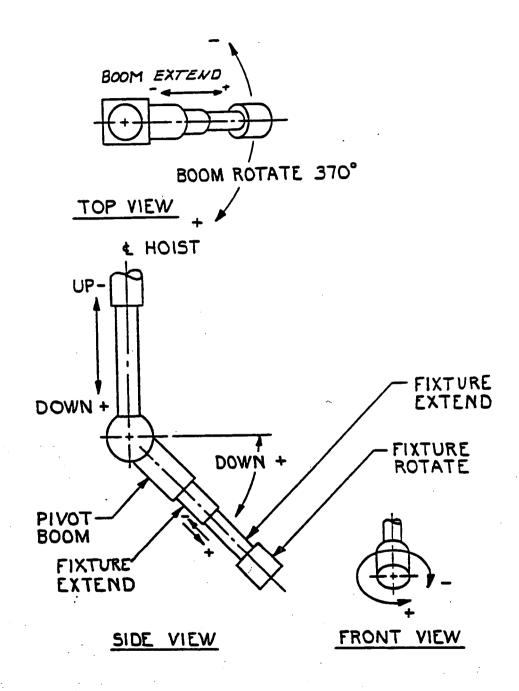


Figure C-3 The PaR's remote positioning device drives.

### 4. The Control Software and Data Presentation

A topography file is input to the computer for each examination. It defines the scan area, data thresholds, calibration parameters and other required information. This topography is derived using the geometry of the weld, the coverage requirements, recording requirements and obstruction information. A full description of the data contained in the topography is presented in the section 5.1. Several terms from the topography will be used in the following description of how an examination (or scan) is performed.

All of the examinations (except one) are performed using the same basic technique. The inspection head is moved over the examination region along the scanning axis (S or X) from S1 (X1) to S2 (X2) as defined in the topography. Ultrasonic data is collected at intervals defined by DS (DX). At S2 (X2), the inspection head is stepped along the indexing axis (I or Y) a distance DI (DY). No UT data is collected during an index movement. The step sizes DS (DX) and DI (DY) are selected to provide the required transducer crystal overlap for the examination. The inspection head moves back along the scanning axis from S2 (X2) to S1 (X1), again collecting UT data. At S1 (X1), the head is again indexed and the process repeats until the end of the scan is reached, at I2 (Y2).

The examination of the nozzle-to-vessel weld from the vessel shell uses a modified version of the above scanning technique. The same basic scanning and indexing motions are used, but, the inspection head is maneuvered around the nozzle as it moves in both the scan and index directions. A third motor drive (Fixture Rotator) is used to maintain the inspection heads orientation parallel to the weld.

A hard copy record of any suspect indications is printed following each examination. This records the position, search unit, depth and ultrasonic signal amplitude of the suspect indications. A sample of this data format is presented in figure C-4. This data format is not always appropriate for some types of examinations. In these cases, Rocketdyne has the capability to provide a graphical representation of the data that may be used to document the data collected during the examination. An example of a top, side, end view presentation is presented in figure C-5.

The ultrasonic data collection program alerts the examiner to any indication that has an amplitude exceeding the preset values. It does not attempt to determine the relevancy of the indications recorded. That is ultrasonic examiners responsibility.

-S- DEG	-I- CM	TRAN. Sysl	DEPTH CM	POSITION TDC	AMP % REF	ID
029.7	005.0	1-2	006.5	220.0	040.0	000.1
028.6	005.0	1-2	6.4	218.0	033.0	000.2
027.6	005.0	1-2	6.4	216.0	022.0	000.3
011.1	005,0	1-2	4.4	151.0	24.0	000.4

### **LEGEND**

S,I (X,Y)	Inspection centimeter		position	coordinates	in	degrees	or
		-					

TRAN SYSL UT system and pulser/receiver slot number.

DEPTH Indication depth in centimeters.

POSITION TDC Indication location in metal path, in units of transient digitizer counts (TDC).

AMP % REF Indication amplitude, in percent of the calibration level (percent of DAC).

ID Indication identification number.

Figure C-4. Hard Copy Data Format

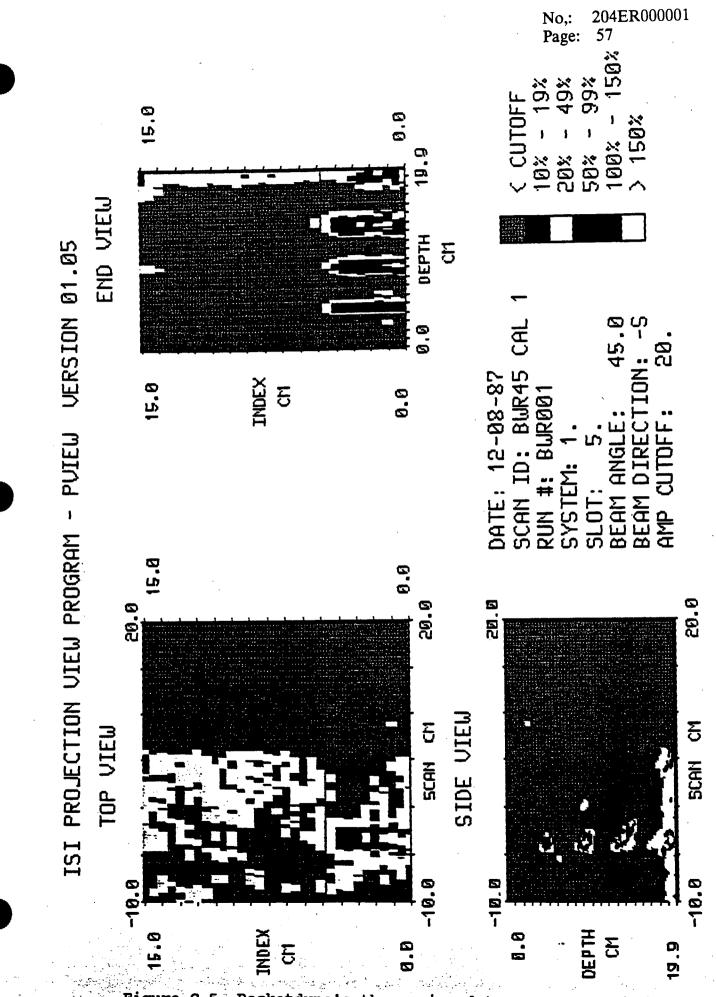


Figure C-5 Rocketdyne's three view data representation.

1.

### 5.1 The Topography Data File Parameters

A weld topography data file provides weld geometry and calibration information to the Rockwell Inservice Inspection (ISI) ultrasonic examination programs. This data set contains the calibration information for up to twelve individual search units at one time. There are up to 29 lines of data defined in the topography data file. Only active calibrations are displayed for lines 6 through 29. A sample topography is presented in figure C-6. It contains the following information:

### LINE 1

- Item 1: The scan S (X) direction, head offset. This offsetmay be in degrees or centimeters and is always positive. If only one inspection head is used, set equal to zero.
- Item 2: The index I (Y) direction, head offset. This offsetmay be in degrees or centimeters and is always positive. If only one inspection head is used, set equal to zero.

### LINE 2

- Item 1: DS (or DX): Scan step size, in degrees or centimeters. This defines the maximum allowable distance betweensuccessive pulsing of the UT transducers that willmeet inspection code overlap requirements.
- Item 2: DI (or DY): Index step size, in degrees or centimeters.
- Item 3: TYPE: This parameter defines the type of inspectionis to be conducted. This is always one for BWRinspections. For PWR examinations, the TYPE numberdepends on the motor drives to be used for theexamination. For PWR NV examinations the TYPE isalways equal to six.

Item 4: SSL: The longitudinal wave speed of sound in the partin meters/(second\*10).

Item 5: SSS: The shear wave speed of sound in the part inmeters/(second\*10).

### LINE 3

- Item 1: THRESH: Data save threshold (in percent of reference).
- Item 2: SUM#: The number of A-scans to average during datacollection (1,2,4,8,16 or 32).
- Item 3: SAMP: The A/D converter sample interval (in usec).

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			Х	Y		
01	HEAD OFFS	ETS	000.0	000	.0	
	DX	DY	TYPE	SSL	SSS	
02	001.0	001.0	001.0	585.0	323.0	
	THRESH	SUM#	SAMP			
03	010.0	001.0	000.5			
			-X1-	-41-	-X2-	-Y2-
04	WELD PARA	METERS	000.0	000.0	050.0	050.0
05	HEAD TRAV		000.0	000.0	050.0	050.0
05			00010			
	TRANSDUCER	DEFINITIO	)N :			
	-123-			-89-	-1011-	-1213-
					C-DAC DELA	Y IW DPN
06		000.0 000				8 245.0 001
07		002.0 000		+S +12	122 150.	0 400.0 002
08		-007.6 000		+S +05		0 440.0 003
					-	
	-14	15-	-1617	718-	-1920-	-2122-
	SYS SLT FF		RG1 LO			H12 BSEND
18		.0 017.7	000.0 000			000.0 000.0
19					300.0 020.0	
20		.0 016.5				
					20010 04010	

Figure C-6 Display Format of the Topography Data File

No,: 204ER000001 Page: 60

# LINE 4

Line 4 contains the WELD PARAMETERS. These parameters describe the rectangular area to be examined:

<u>ITEM</u>	<u>NAME</u>	DESCRIPTION				
1	S1 (or X1)	Start of exam zone, scan direction				
2	I1 (or Y1)	Start of exam zone, index direction				
3	S2 (or X2)	End of exam zone, scan direction				
4	I2 (or Y2)	End of exam zone, index direction				
		LINE 5				

Line 5 holds the HEAD TRAVEL PARAMETERS. These parametersspecify the rectangular region the inspection head will moveover. This region is usually larger than the area described by theweld parameters in order to accommodate angle beam examinations.

<u>NAME</u>	DESCRIPTION				
S1 (or X1)	Start coordinate, scan direction				
I1 (or Y1)	Start coordinate, index direction				
S2 (or X2)	End coordinate, scan direction				
I2 (or Y2)	End coordinate, index direction				
	S1 (or X1) I1 (or Y1) S2 (or X2)				

#### LINES 6 THROUGH 29

The remaining lines of the topography data set contain search unit calibration data. Twenty two data items make up the transducer definition field for each search unit (transducer):

ITEM	NAME	DESCRIPTION				
1	SYS	UT system number, either 1 or 2.				
2	SLT	Slot number of pulser/receiver in UT signal chassis (either 1,2,3,4,5, or 6).				
3	S/N	DAC/pulser/receiver serial number.				
4	OS (OX)	Offset of transducer relative to zero reference point measured in the scan direction.				
5	OI (OY)	Offset of transducer relative to zero reference point measured in the index direction.				

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ITEM	NAME	DESCRIPTION
6	S/L	Ultrasonic wave type, either S, L, or P (S for shear wave, L for laminar L-wave, P for planar L-wave). A "*" or "1" through "6" may also be present following the S or L. This selects a pitch/catch examination. If "*" is used, the puls- ing channel is SLT + 1. If $1 - 6$ is specified, the pulsing channel is the slot specified.
7	ANG	This is the angle of the UT beam from normal, in degrees.
8	DIR	UT beam direction for the search unit. It must be $+/-S(X)$ or $+/-I(Y)$ for angle beam search units. It must be blank (two spaces) for straight beam search units.
9	O-DAC	ADC value corresponding to 0% screen height on the analog UT display scope.
10	C-DAC	ADC value corresponding to 50% screen height on the analog UT display scope.
11	DELAY	The time from the main sync pulse to the start of data collection in units of TDC.
12	IW	The time from the main sync pulse to the end of data collection in units of TDC.
13	DPN	DAC calibration data page number.
14	FFD	The time from the main sync pulse to the front surface reflection in TDC.
15	CVF	Metal path conversion factor in TDC per centimeter.
16	RG1	Time to the end of the first variable recording gate in TDC.
17	LO1	Alert value in ADC (in percent of DAC) for RG1.
18	HI1	Alarm value in ADC (in percent of DAC) for RG1.
19	RG2	Time to the end of the second variable recording gate in TDC.
20	LO2	Alert value in ADC (in percent of DAC) for RG2.
21	HI2	Alarm value in ADC (in percent of DAC) for RG2.
22	BSEND	Time to the trailing edge of the back surfaceUT signal. Used to detect loss of the backsurface signal in L-wave examinations.

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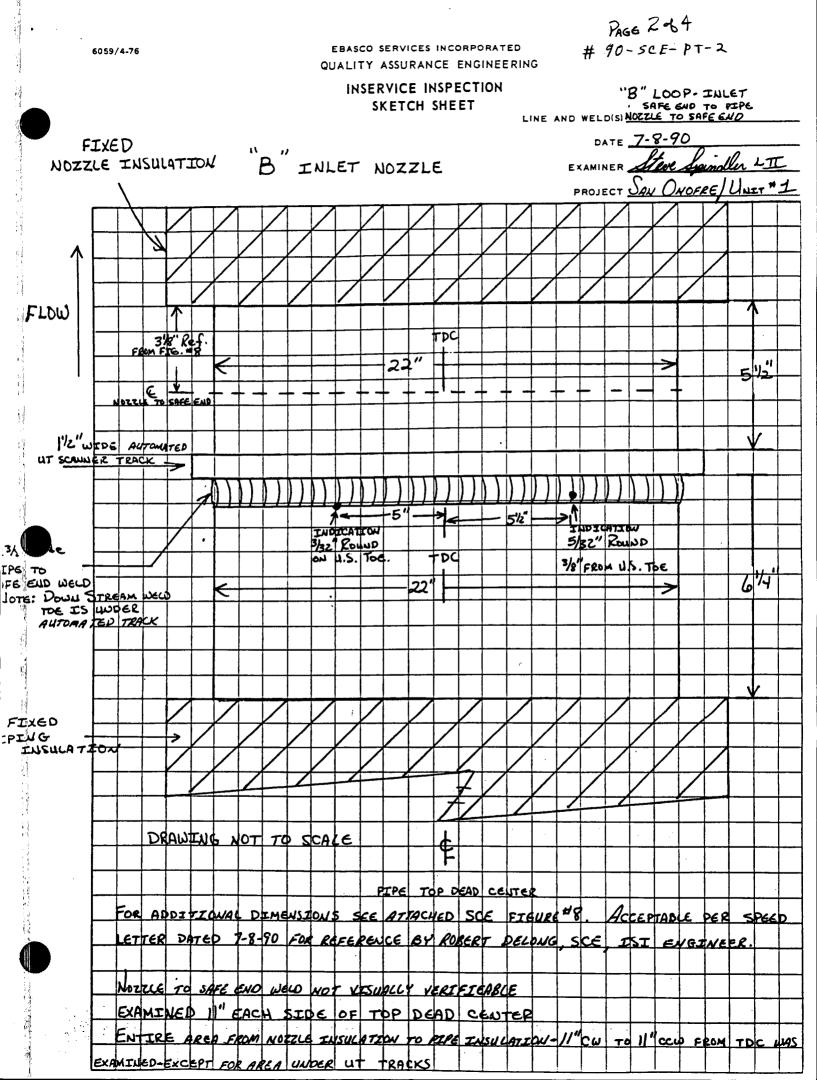
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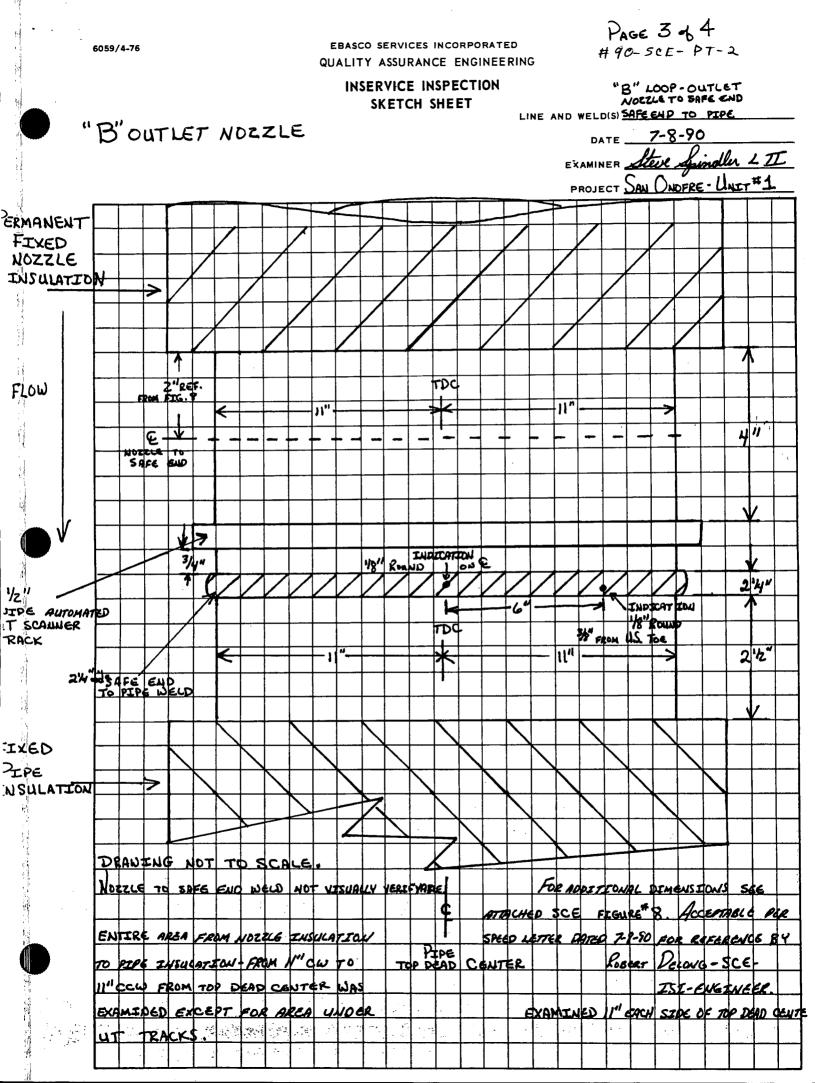
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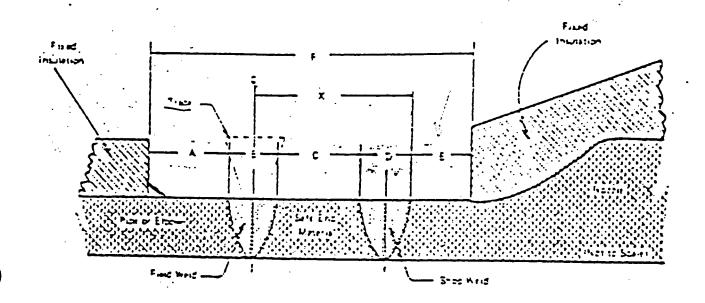
#### EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING INSERVICE INSPECTION LIQUID PENETRANT EXAMINATION REPORT

PROJECT								
$\leq \Lambda$	، اس د ا	 1			PROCEDUR	-		
COMPONENT OR	SYSTEM		1			DT-575	<u>іт</u> і	
B'LOOP - INLE	T + OUTLET - NOZZLE TO	SAFE END!	LAFE END TO	ER (THERMON	NETER SIN	-2046		88°F
REACTOR CO	AAL AUT	ACTURER	offe and to	ine White ion		TYPE		CH NO.
<u></u>		Autonent						
Penetrant	MAGNAFLU	x			SKL	HF/S	89K	'OIK
Cleaner						•	001	
	MAGNAFLUX				- JXC	·NF	8920	
Developer	MAGNAFLUY	(			SKL	D-NF	8910	5P
			CATION	LOCATION OF		1		
COMF	PONENT / WELD	NONE	LENGTH (INCH)	(Use Sketch She			REMARKS	
. 1	<u> </u>	$ \land \land$						
NLET NOZZI	LE TO JAFE END	$\square$	N/A	A/4			**	
	~	$\mathbf{\nabla}$	.1	1.			**	·
$\sim$	E TO JAFE END	$\mathbf{k}$	N/A Elan Roma	Ala		SEE ATTAC	HED SKETCH	FDR
NET SAFE	END TO PIPE	A A	5/32" Kouno 3/32" Rouno	See Si	LETCH		DWS + LOCA	
<b>^</b>	<b>^</b>		1/8" ROWO				HED SKETC	
LITLET JAFE !	END TO PIPE	N/A	ts" ROUND	SEE SKE	тсн	LINISATIO	NS + LOCA	TIONS
Non								
NUCZLE 10	SAFE END WELDS	MERE	LA TON	SUALCY VE	LIFYADLE	- 50 ENT	IRE ACC	ESSIBLE
AREA WAS	7-87 <del>ExAMINE</del> EXAMINE	D - FOR	THESE	ALEAS SEE	ATTACHE	D SKETC	HES.	
		1				1		
								$\square$
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SEE AT	TACHED EVA	LUAT	ION .S	E HTET				
SEE AT	TACHED EVA	LUAT	ION S	HAET Chund	A sce	Jure	# 10	.2.90
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SEE AT	TACHED EVA	LUAT	ION S	E HA ET		June/		
SEE AT	TACHED EVA	LUAT	ION S	Church			1.	
SEE AT	TACHED EVA	LUAT	ION S	chind Show			1.	
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SEE AT	TACHED EVA	LUAT	ION S	Church Church			1.	
SEE AT	TACHED EVA		ION S	Church ET				
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SEE AT	TACHED EVA		ION S	Church ET				
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SEE AT	wed the se	E Ly	ION S	Alton			11/28/9 11/28/9 5/12/9 BATE 7-8-90 DATE	
XAMINER XAMINER	TACHED EVA		ION S	Show	LEVEL LEVEL N/A		<u>11/28/9</u> <u>7/12/9</u> Бате 7-8-90 Дате Л/А	
SEE AT	wed the se	Elg	ION S	Show			11/28/9 11/28/9 5/12/9 BATE 7-8-90 DATE	





PAGE 4 - 8 4 # 90-5 e E- PT-2



Ausor Vesa: Notine	Dimension interest								
lon:://:Jim	4	1 2	: :	. · >	. <b>E</b>	1 *	x'.		
	2	2	3	. 1.1 7	. 7	: 1212	4		
A-Iner (Coio Leg)	2-1.7	102	217		: : 4	16-1-4	. 534		
B-Outer Inst Leg	13.6	2	234	2		512			
E-Inet (Cod Leg)	1	2	217	214	2	534	6.74		
-Cutier (hos Leg)	,	2	3	İ.,		•	4 1.E		
C-init (Cove Log)	2.1.4	2	158	1-7.E	1 1.2	10 1.4	5.1.2		

FIGURE 8. TRACK AND WELD LOCATIONS ON THE SLX INLET AND OUTLET REACTOR VESSEL NOZZLES NUCLEAR GENERATION SITE UNITS 1, 2 AND 3

#### SITE SUPPORT SERVICES PROCEDURE SO123-XVII-1 REVISION 4 PAGE 13 OF 27 ATTACHMENT 2

## INSERVICE INSPECTION PROGRAM IMPLEMENTATION

Page	<u>1</u>	of	1
D	ate	10/1	790

Unit \_\_\_\_

#### INDICATION EVALUATION SHEET

Exan	ninati	on Data Sheet Number 90-SCE-PT-2	Page Number 1
Exan	minati	on Item Number "B" LOOP INLET OUTLET NOZZLE TO SAFE END	System Description REACTOR COOR
٩.		CATION DIMENSIONS (from scan data sheets)	·
٦.	INDI		
	1.	Indication Length (inches): (1) 10 5/32"	(2) 10 3/32 (3) 20 1/8
	2.	Indication Depth (through-wall): N/A	
	3.	Separation from Component Surface: N/A	
	4.	Component Wall Thickness (measured): 2½"	
		· · ·	
Β.	Calc	ulations of Code Dimensions	
	1.	Dimension "1" (from Al(above)):	
	2.	Dimension "a" (from Al(above)):	
	3. 4.	Dimension "s" (from A3(above)): Dimension "t" (from A4(above)):	
	<b>T</b> •		N/A
	5.	"s/a": if > 0.4 then a = 2a "a/1":	
	6.	d/1 .	
	7.	"a/t%":	•
			· .
С.	Eval	uation of Indication	
	Acc as	ications evaluated as acceptable IAW SO1-X eptance criteria extracted from ASME III 7 directed by SEC IWA 3100 of SEC XI 74 ed. teria in the course of preparation.	4 ed. 575 add. NB 5352
		_Original Examination Data Sheet Number	Date
NCR	Issue	d: NCR Number	Date
		N/A N/A N/A	Js And Angent "%2/90
	•		guald church 10.2.9
		PERFORMED BY: <u>KLatong 10/2/</u>	<u>90  Brack Planum 10.2.90</u> Engineer/SCE Level III
		/ Date	
	·	REVIEWED BY: C. L. Mandt	/ 11/28/90
		SCE QA Engineer	r / Date //06/90
	••	Cost nonipoon ANII	ijacire
XVI	1-1.AU	IT ATTACHMENT 2	PAGE 1 OF 1

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Public Street

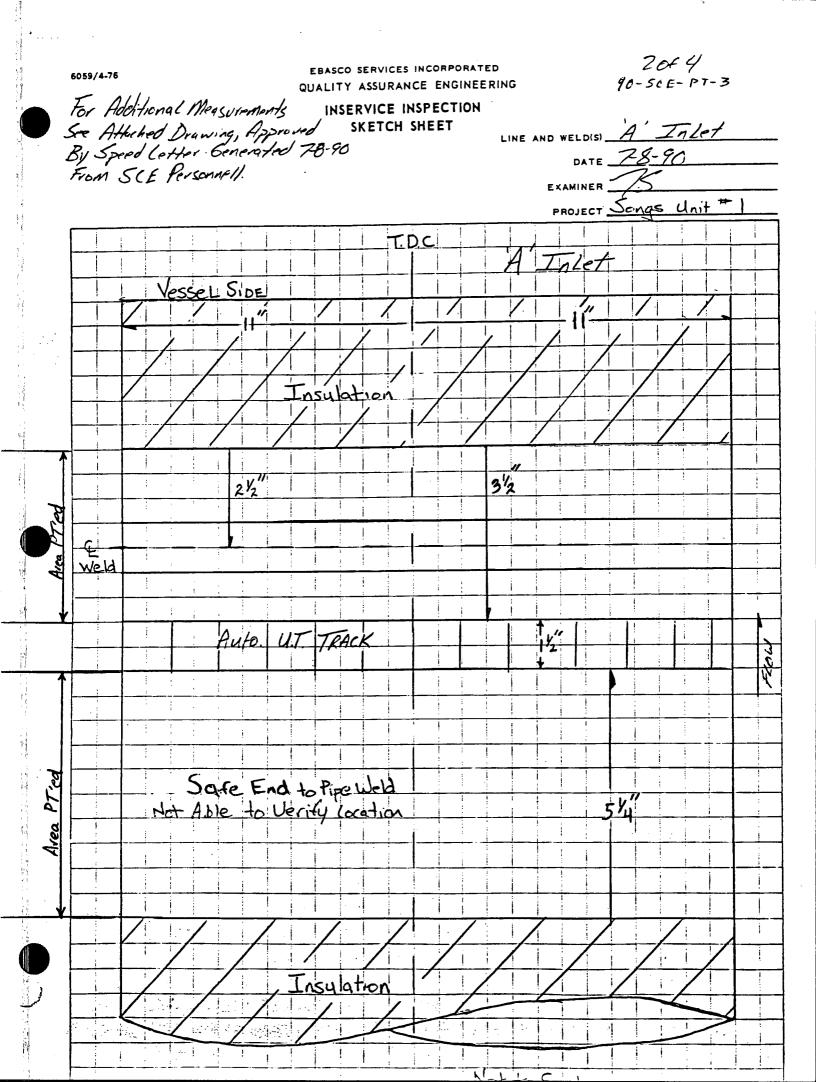
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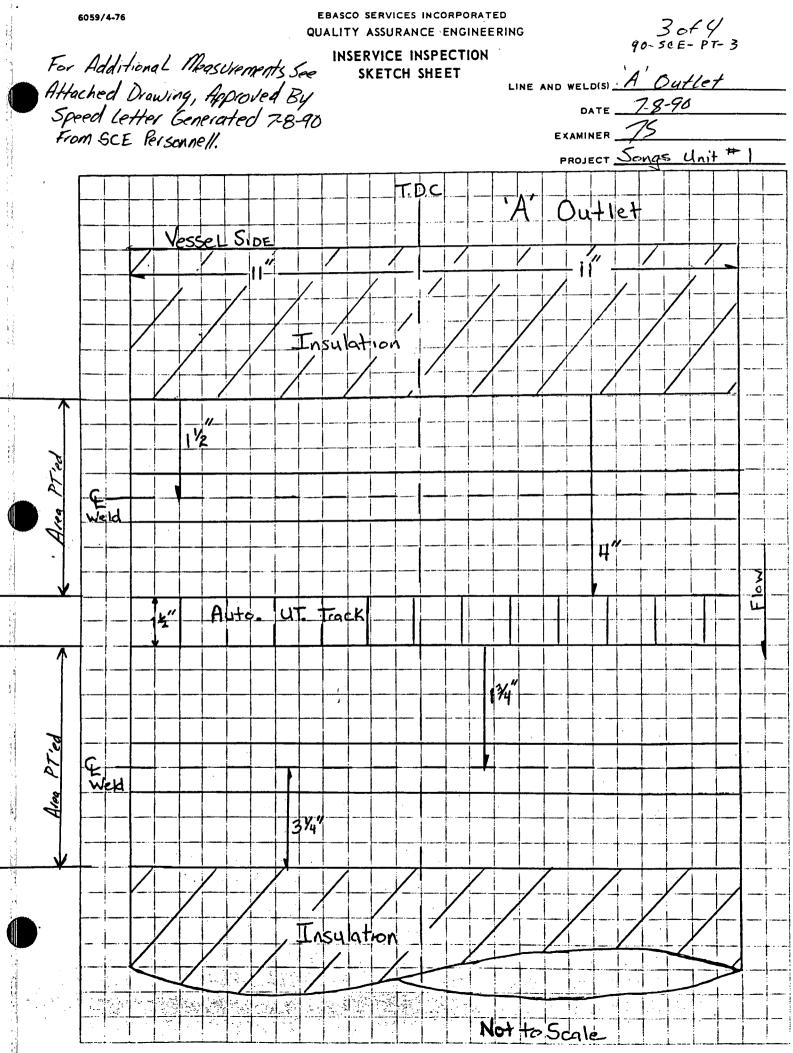
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#### EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING INSERVICE INSPECTION

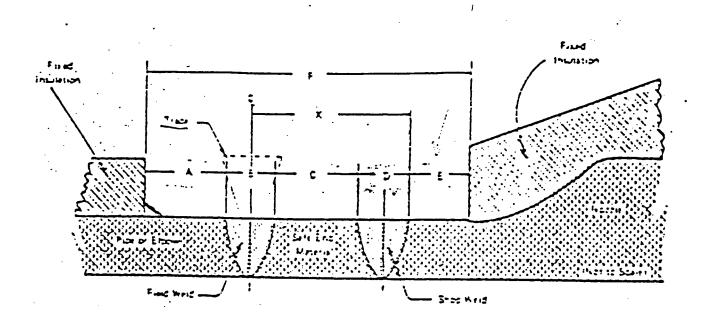
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PROJECT			D	$\wedge$			
COMPONENT OR	Onofre Unit	#]	KEACTOF	COOLAN	TNCE-+	1-375	- ) [   TEMP
'A' Loon	- Inlet + Outle	+- NOZ	ZLE to SAF	End/Safe End To	Pattemo	Gouge :	204688°F
<u> </u>		ACTURER				TYPE	BATCH NO.
Penetrant	Mograficx			10 min	SKL	-HF-S	89KOIK
Cleaner	Magnaflux			5 Min	SKC-	NF	89101P
Developer	Magnathx			7 min	SKD	-NE	89605P
СОМР	ONENT / WELD	IND NONE	LENGTH (INCH)	LOCATION OI	F INDICATION eet if Necessary)		REMARKS
'A' Outle	4	$\mathbf{X}$	N/A	NIA		SeeS	Kotch
	Nozzie Weld	$\square$		•		Ţ	-imitations
Sofe End to	Pipe Weld	$\geq$					
A' Inlet	•	$\mid$					
Safe End to	o Nozzie Weld	$\mid$		-			
Safe End h	Pipe Weld	$\bowtie$				ļ	
	N//A						
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	n SIE by	to s	chull	Leved The	LEVEL	<u>66/4</u>	DATE
	- Sulde		· ·			_	28-90 DATE
REVIEWEDBY	htella	<u>ノ</u>			T REPORT NO.		7-8-90 DATE
N. J. Johns	- ROCKWELL Q	A		4.	90- SCE-	PT-003	
	I-ZZ.5 Rev. O			102100	· · · · · · · · · · · · · · · · · · ·		





40F4 40-5CE-PT-3



<sup>2</sup> to zor Veza: Nature	Lines princes								
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A-last (Coid Leg)	2-1.7	1.7	2:2		: : 4	161.4	534		
6-Outies Inct Legt	13.4	2	334	2	1	F12	4		
E-iner (Dod Leg)	1 ;	2	2.12	214	2	§ 3·4	6.14		
-Currer (hos Leg)	1	2	3	2	,	9	41.72		
C-init (Cost Log)	2.1.4	2	358	1.7.12	1 1.2	10 1-4	5-1.2		

FIGURE 8. TRACK AND WELD LOCATIONS ON THE SIX INLET AND OUTLET REACTOR VESSEL NOZZLES 11

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#### EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING INSERVICE INSPECTION

	LIC		NETRANT	EXAMINATION F	REPORT	P	G. 10F5
PROJECT			<u></u>			PT-575	REVISION
COMPONENT OR	ofre Unit #	N. 11					<b>TEMP</b>
Kenctor	Coolant Los	op ( I	whet and	Jouthet	Temp	Gauge #	
·	MANU	FACTURER	l			ТҮРЕ	BATCH NO.
Penetrant	MagnaFlux			10 m in	SKL	-HF-S	<u>89KOIK</u>
Cleaner	Magnaflux			5 min	SKC -	NF	89101P
Developer	Magnarly			- 7 min	SKD	NF	89105P
Сом	PONENT / WELD	IND NONE	LENGTH (INCH)	LOCATION OF IND (Use Sketch Sheet if )			REMARKS
InletNe	ozzle to Safe EN	0 /	N/A	N/A		**(	SEE ATTACHE
attetho	zzle To Safe End						
	end to pipe			· · ·			
Outletso	Fend to pipe			<u> </u>			↓
	·	-			$ \rightarrow $	[	
	·			N/ A			
<u></u>				N A	· · · · ·		
<u></u>							
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	wines In.	SCE	30	choud ;	leve /z	1 7	12/00
EXAMINER M. O.	L,h	•		LEV	/EL II		DATE 7/8/90
	N/A			LEV	N/A		N/A
REVIEWED BY	son Rockwall E	A IF			ORT NO.		DATE 7-9-90
* SOL XX	(VII -22.5, 1				· .	<u></u>	<u> </u>
	(Allan)	NIN A	LA D	in inlad	lan		

6059/4-76

EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING

PG. 20F 5 # 90-5CE-PT-1

LINE AND WELD(S) \_\_\_\_

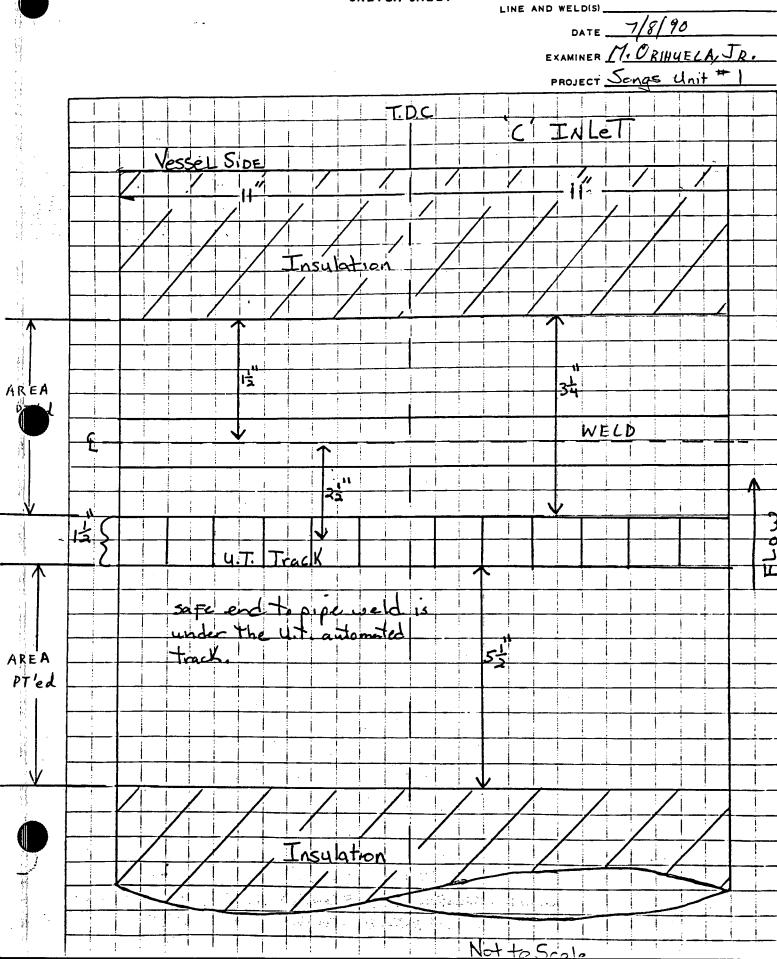
#### INSERVICE INSPECTION SKETCH SHEET

DATE <u>7/8/90</u> EXAMINER <u>M. ORIHUELA, JR.</u> PROJECT\_SONGS-1 DUE TO RESTRICTED PHYSICAL ACCESS TO THE ¥X 22" LOOP C INLET AND OUTLET NOZZLES, ONLY (CIRCUMFERENTIAL DISTANCE) WERE EXAMINED : O TO II"OW O TO 11" CCW, TWO WELDS WERE EXAMINED AND WHERE ACCESSIBLE : NOZZLE-TO- SAFE END AND SAFEEND - TO- PIPE / SEE ATTACHED SKETCHES FOR LIMITATIONS), SINCE THESE WELDS WERE NOT READILY SEEN, IT IS ASSUMED THAT NOT ALL OF THE CODE REQUIRED EXAMINATION AREA WAS EXAMINED. IT IS ALSO ASSUMED THAT THE SCE-SUPPLIED SKETCH (SEE FIGURE & AND SPEED LETTER DATED 7/8/90 ROBERT HARDY (RI) TO ROBERT DELONG (SCE) AS WELD LOCATION. THE 15 ACCURATE AS FAR AREAS EXAMINED ARE SHOWN ON THE ACTUAL ATTACHED SKETCHES. M. Onl 1.200 17 . . . . i.

EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING

PG. JoF5 # 90-SCE-PT-1

# INSERVICE INSPECTION SKETCH SHEET



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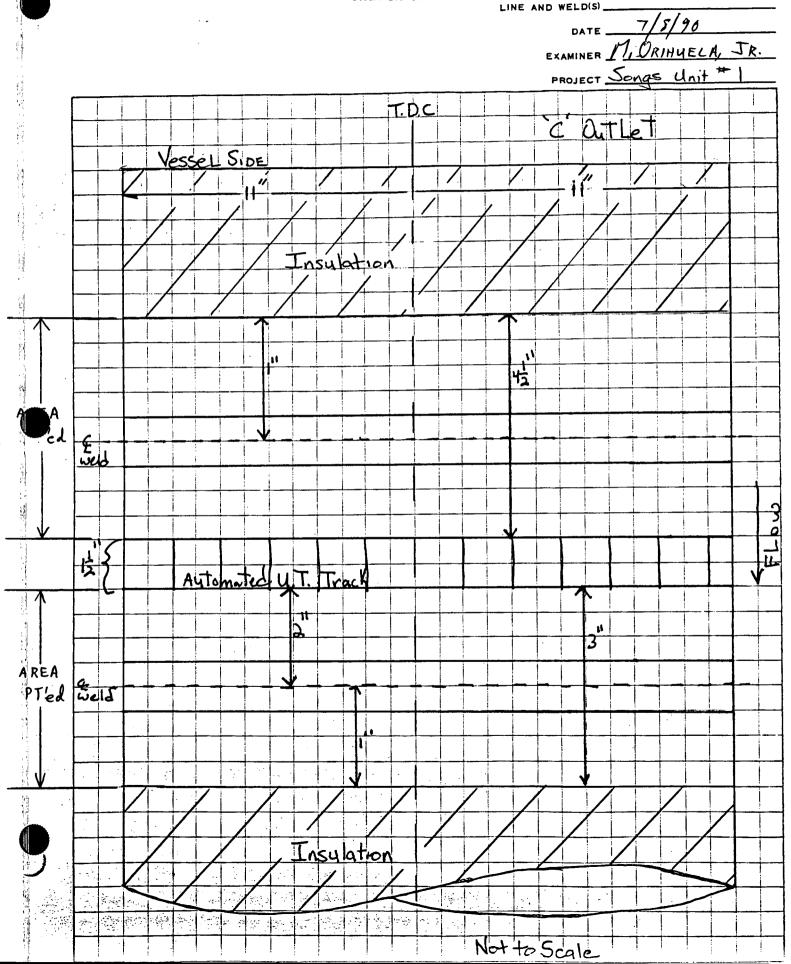
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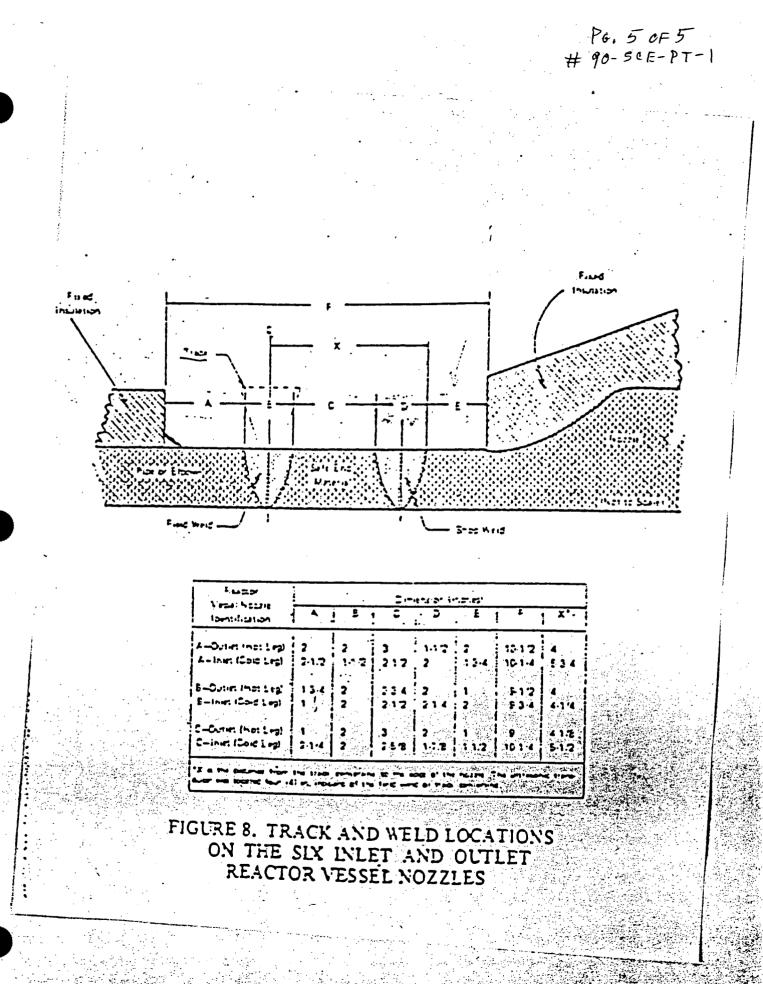
6059/4-76

EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING

PG. 40F5 90-SCE- PT-1

#### INSERVICE INSPECTION SKETCH SHEET





DATE $7/22/3$ SCE-UT-S75-I $+$ REV JGE ID RECORDABLE INDICATION 248 SEE ATTACHED INDICATION A DATA SHEET. N A N A
JGE ID       RECORDABLE INDICATION $348$ $SEE$ $ATTACHED$ $INDICATION$ $A$ $DATA$ $SHEET$ $A$ $DATA$ $SHEET$ $N$ $A$ $VAB$ $NA$ $NA$ $A$ $NA$ $NOTCHESMA$ $NA$ $NOTCHESMA$ $NA$ $NA$ $NA$ $NOTCHESMA$ $NA$ $NA$ $NA$ $NOTCHESMA$ $NA$ </th
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$\frac{N}{A}$
IMFERENTIAL $\frac{1}{2}$ SIZING $\frac{1}{2}$ OTHER $\frac{N/A}{A}$ INSTRUMENT AUT KRAMER Model $\frac{USK-7S}{9-1146}$ Cable Length $\frac{6'}{4}$ IDBAND Reject $\frac{OFF}{ED}$ Damping $\frac{N/A}{A^{2}}$ Damping $\frac{A \times 23}{CIRC}$
IMFERENTIAL $\frac{1}{2}$ SIZING $\frac{1}{2}$ OTHER $\frac{N/A}{A}$ INSTRUMENT AUT KRAMER Model $\frac{USK-7S}{9-1146}$ Cable Length $\frac{6'}{4}$ IDBAND Reject $\frac{OFF}{ED}$ Damping $\frac{N/A}{A^{2}}$ Damping $\frac{A \times 23}{CIRC}$
IMFERENTIAL $\frac{1}{2}$ SIZING $\frac{1}{2}$ OTHER $\frac{N/A}{A}$ INSTRUMENT AUT KRAMER Model $\frac{USK-7S}{9-1146}$ Cable Length $\frac{6'}{4}$ IDBAND Reject $\frac{OFF}{ED}$ Damping $\frac{N/A}{A^{2}}$ Damping $\frac{A \times 23}{CIRC}$
INSTRUMENT AUT KRAMER Model $USK-7S$ 9 - 1146 Cable Length $6'1 D BAND$ Reject $OFFED$ Damping $N/AA^{X} 20 / CIRC 20 Fine A^{X} 23 / CIRC 10$
AUTKRAMERModel $USK-7S$ 9-1146Cable Length6'10 BANDReject0FFEDDamping $N/A$ AX 20 / CIRC 20Fine
$\begin{array}{c} 9 - 1146 \\ \hline 0 BAND \\ \hline D BAND \\ \hline Reject \\ \hline 0 FF \\ \hline Damping \\ \hline N/A \\ \hline A^{X} 20 / \frac{cIRC}{20} \\ \hline Fine \\ \hline A^{X} 23 / \frac{cIRC}{0} \\ \hline 0 \\ \hline \end{array}$
ED Damping N/A AX 20/CIRC 20 Fine AX 23/CIRC 10
AX 20 / CIRC 20 Fine AX 23 / CIRC 10
Response AX Response AX Screen Height <u>12T HOLE@ 80% FSH</u> 2THOLE 801
Screen Height 121 HULL BUTErSIT 2 HOLL
CALIBRATION CHECKS
AMPL: 20% (dB) SWEEP + 10% OF OF INITIAL AMPL INITIAL LOCATION
YES NO YES NO
N/A N/A
N A
R(S):
$\frac{1}{\sqrt{2}}$ TC-1A LEVEL $\frac{1}{\sqrt{2}}$ DATE $\frac{7/2}{\sqrt{2}}$
$\frac{1}{\sqrt{2}}$ TC-1A LEVEL $\frac{1}{\sqrt{2}}$ DATE $\frac{7}{2}$
) BY:
John LATE DATE 0/.190
Mangen SCE DATE 8/9/90 MANAPLEN DATE 11/28/90
OF THE CAL. BLOCK, THE
THE AXIAL SCAN.

EBASCO SERVICES INCORPORATED MATERIALS TESTING AND EXAMINATION SERVICES **INDICATION DATA** 

. 1 <sup>-</sup> . e.s.			•						DA	TA TABULATIO	N					
	SCAN	) N		EXAM.	ON			EX	SEARCH UN			50% DAC MAXIMUM A	MPLITUDE			HT BEAM K REFLECTION)
ST. BEAM	CIRCUM- FEREN- TIAL	1	INDICATION NO.	WELD) OF WI	(ADJ SIDE	MAX % DAC	SWEEP READING	CIRCUMF (DISTANC CCW REFEREN	ÆC₩OR I	AXIAL (DISTANCE FROM WELD ଜୁ	Mini Sweep Reading	MUM S.U. POSITION	MAXI SWEEP READING	S.U. POSITION	INDICATION AMPLITUDE (% FSH)	BACK REFLECTION AMPLITUDE (% FSH)
N/A	N/A	V		TO	P	126	0.61"	I"NORT	H OF WES	т О	0.58"	-0.17"	0.7"	0,05"	N/A	N/A
N/A	N/A		2	BOTT	om	141	0.74"			0,55 "ON	0.7"	0.47"	0.8"	0.66"	N/A	N/A
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EXAMINER(S) Ŧ TC-1A LEVEL TC-1A LEVEL \_\_\_\_\_ NAMI 11/28/20 mpom

SHEET \_\_\_\_\_ OF \_\_\_\_\_

ITEM IDENTIFICATION CRDM #59

CALIBRATION DATA SHEET NO. 90-SCE-UT-005

CONTINUATION ATTACHED

NO NO

6062/1-90

6059/4-76

#### EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING

PG. 30F3 REPORT # 90-SCE-UT-OC

#### INSERVICE INSPECTION SKETCH SHEET

LINE AND WELD(S) WELD No. 59 DATE \_\_\_\_\_\_\_\_\_\_\_ EXAMINER M. ORIHUELA PROJECT <u>SONGS-1</u> CRDM HOUSING, WELD NO. 59 ÓÞ #1 T.D. SCALE : 1-TO-1 505 UT UT 8/3/30 11/28/90 11/28/90

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6063A/1-90		AN (	ONOF			RIAL		STIN(		EX		ON SERVIC	es <u>- ut- 007</u>		 /;
SYSTEM.				<u> </u>	UR	<u>=  </u>	/ES	SEL	PROC	CED	JRE <u>S</u> C	E-UT-	575-1-	REV.	
. (	COMPO	NENT O	RWELD	IDENT	IFICAT	TION			ТЕМР		GAUGE I	D	RECORDA		N
CRD	MI	lous	ING,	W	ELI	5 N	10, 1	59	88	9	2042	8 N	ONE.		
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	OD	<b>₽</b> 0° V	NHAZ	₽ 0°	BASE	MAT	ERIA					ERENTIAL /	the sizing MA		<u> </u>
Í		SEA	ARCH UI	лт								INST	RUMENT		
Manufact					н			_ M	lanufact	turer	KRAUT	KRAMER	Model -	<u>USK-</u>	75
1	Manufacturer <u>KB-AEROTECH</u> Style <u>GAMMA</u> Mal Single DrDual						s	erial No	)	31459	- 1146	Cable L	ength	DUA	
Serial No								_ Fi	requenc	cy —	BROAD	BAND	Reject .	OFF	
Size(s) _	0,3	75"	ø		Fre		15 M	Z R	ep Rate	ə —	FIXE		Dampin	ng <u>N/A</u>	
Angle	0°		. Mode _	La	NG	-		d d	B Gain:	Co	arse	20	Fine		
Couplant	<u>ULTI</u>					088			mplitude	8 - 9	Full Scree	an Height	T BACK REP	LECTION	<u>C</u> /l
		DAC	PLOT-	rime -	15.	<u>35</u>	AM, E	M				CAL	IBRATION CH	T	
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NOTE:	indicate	ə referer	nce refie	ctor lo	cation	and a	amplit	ude ab	ove. I	ANII	<u>l'ar</u>	nan	AAN DA	TE_// &	770
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BROJECT SAN ONCERE U	NALS TESTIN ULTRASOI ハエキー	IG AND E Nic Calie Data s		N SERVICES TA 10-SCE-UT-0	009 * DATE	OF 7 <i> </i> _7/
SYSTEM REACTOR PRESSURE	VESSE		DURE <u>SC</u>	E- UT- 575	<u>-1</u>	
COMPONENT OR WELD IDENTIFICATI		ТЕМР	GAUGE ID			ON
CRDM HOUSING, WELD	No. 59	88°F	204	8 NONE		
CKDVI HOUSING, VVELU						
		<u> </u>	N			
			A			
15 407 ( 50108 TU	v 0.74"	76°F	2048		NOTCHES	SDH
CAL BLOCK NO. <u>CB-0036/50109</u> TH		XAM COVI				
MAND DO NO WHAZ NO BASE						N/A
KAND Larod A24,0° WHAZ A24,0° BASE						
SEARCH UNIT	,			INSTRUMEN		_
Manufacturer KB AEROTECH		Manufactur	er <u>Kraut</u>	KRAMER	Model USK-7	7 <u>5</u>
Style GAMMA D'Single M	Dual	Serial No.	31459-	1146	Cable Length	
Serial No		Frequency -	BROAD	BAND	Reject BFF_	
Size(s) 0,25" Ø Fred	2.25MHz	Rep Rate _	Fix		Damping	
Size(s) 60°/5° Ø Free Angle 60°/5° Mode 5 HEAR	2	dB Gain: C	oarse	40	Fine2	
Couplant ULTRAGEL Batch No. 90	88	Primary Re	ference Respo	Height <u>5THO</u>	LE @ 80%	FSH
		Anpitodo				
DAC PLOT-TIME	O AM PM		r		ON CHECKS	
100				AMPL 1 20% ( OF INITIAL AN	/	+ 10% OF LOCATION
90 THOLE			TIME		IO YES	NO
80			PINAL			
70			1:35 pri	V NI	A	N/A
60						
% FSH 50					7	
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10	15THO	2.	Furad	90 TC-1		DATE
			VIEWED BY:	9 1		
0 1 2 3 4 5 6 sweep	78	9 10 .1.	Stere Sp	indly LI	DATE7/27/	90
	- 7×"			- · · · ·	DATE	
SCREEN SIZI NOTE: When performing examinations whe			1 Dal			
indicate reference reflector location	and amplitude a	above. AN	Ki Chaff	rompose	DATE 11/2	<u>8/40</u>
ADDITIONAL REMARKS X 50 1- XX	VII-22.7	7 REV	. 1			
T AND MAR DEDEA	DHEN H	TA EV	ALLATE	THE 45	- O INDICATI	ows
		F 11T-	por). N	O RECORD	ABLE INDI	CATION
FOUND (SEE REPORT NO	90-SC	c- 4 1-				٤.,
THIS EXAM WAS FERFO FOUND (SEE REPORT NO WERE SEEN, SENSITIVIN RATHER THAN THE	ry WAS	E 574	BLISHED	USINY .	THE ST H	DIE

PROJECT San anoFre Unit	DATA S	HEET NO.	10-3CE-41-0	<u>506</u> DATE	<u></u> _
SYSTEM_ <u>APV CLOSURE Head</u>	PROCE	DURE <u>SE</u>	-UT-575-2	REV.	
COMPONENT OR WELD IDENTIFICATION	ТЕМР	GAUGE ID	RECO		N
Weld 6C; Holes 29 Thry 42	88°F	204B	NONE		
	×/				
		4			
CAL BLOCK NO. 50104/68-0031_THK _9.0'		2048	-	NOTCHES	S
	EXAM COV	ERAGE			
AD A OD A OWHAZ A OBASE MATERIAL		CIRCUMFE	RENTIAL 12 SIZING		14
	EQUIPMEN				
SEARCH UNIT	1	Kon HI.	INSTRUMENT	del 11516-75	
Manufacturer <u>KB-Acrotech</u>			<u>838</u> Ca		
Style <u>Gamma</u> Single MarDual			nd Re		
Size(s) Freq. 2.25			Da		
Angle <u>60°</u> Mode <u>Shear</u>	dB Gain: C	oarse <u> </u>	0 Fir	1e3/	
Couplant <u>Ultragel I</u> Batch No. <u>90.88</u>	Primary Re	ference Respo	nse Height	SH VyT Hol	E
DAC PLOT-TIME AM, P	M	-	CALIBRATION		
100			AMPL ± 20% (dB) OF INITIAL AMPL		
90 KITHOLE		TIME	YES NO	YES	
70		FINAL	N/A	1	N
60		1320pm			
% FSH 50					
40	L				
40 30		(AMINER(S):	0	77	
20 RThole	1	M. Oni			
10	2.	the like /	TC-1AL		ATE -
	54TH RE	VIEWED BY:	0.		
0 1 2 3 4 5 6 7 E SWEEP	31 9 10 I.D. Noth 1	Steve So	indly LI	DATE 7/26/90	)
	/ (( ) -	WR Que	Δ	DATE 7.27	
SCREEN SIZE: <u>222</u> NOTE: When performing examinations where no DAC	is required,	All All	$\gamma $		
indicate reference reflector location and amplitu			Mampson	DATE	-72
ADDITIONAL REMARKS * SOI-XXVII-22.	6 Rev D			•	
The Axial Scan was performed from was performed on one side only Due From the 34T Hole, There was A tab Dif See O heport for Limitation (Lifting Lug	n one side	e only Due	e To configurati	on . The circ .	SLa
was performed on one side only Due	TOLONFIG	uration .	when maxin	aizing the r	respo

6063A/1-90	2 Orac FR		ALS TES	STING AN	DEX/	CORPORAT AMINATIO RATION D/ EET NO	N SERVIC	ES - UT- 001	PAGE	0F
SYSTEM CLO				PR(	OCEDI	JRE <u>SC</u>	E-UT-	575-2	<u>₩</u> REV.	
	IENT OR WELD		)N	TEN	1P	GAUGE I		RECORDA		N
CLOSURE F	EAD TO	East		88	°F	2048	N	012E		
	n Stud		•	1	$\neg$					
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CAL BLOCK NO.	CB-0031/5		9 "	88	) F	2048	3	NOT	CHES	SDH
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AID MAOD	⊠ o⁰ whaz	S 0º BASE N	ATERIAL	MA AXIAI	. <b>M</b> A	CIRCUMFE		🛦 sizing 🏹	OTHER N	<u>la</u>
		· · · · · · · · · · · · · · · · · · ·		EQUIPM			•			
	SEARCH UN		[			V		RUMENT		c
Manufacturer K-		•						ANTER Model		
Style GAM		Single 🖄 D	Jual	Serial I	VO. I R	20ADBA	· 1146	Cable L Reject		NL-KN
Serial No. <u>C2</u>			2-141-			IKED		Reject		
Size(s)			2.25MHz			arse 20		Danipi	-	
		ONCITUDIA					onse V			
Couplant UCTP4C	ELII Batch N	10. <u>908</u>	0	Amplitu	ide - %	Full Screen	n Height	Those @	2010	-24
	DAC PLOT-1	IME 1315	2_ AM/P	Â)			CAI	JBRATION CH	ECKS	
100				<u> </u>		Г	AMPL	: 20% (dB)	SWEEP	+ 10% OF
90	-								INITIALL	
80	<u> </u>			BR	· [	TIME	YES	NO	YES	NO
70		<u> </u>	_			345pm	$\succ$	NA	$\triangleright$	NA
60			<u>TD.</u>			<u> </u>	<i>c</i>	N		<b>F</b>
% FSH 50		<u>1/2</u> T		×				A		1
40			24						1	<u> </u>
30			34.7		EXA	MINER(S):	- 10.			-6-2
20					1_2	Mur Spi	nder	TC-1A LEVE		
					2	<u></u>	le	TC-1A LEVE	<u>ال الم</u>	
10					REV	EWED BY:				
0 1	2 3	4 5 6	7 8	9 10		1. Onil	)	. (	- 7/26/	90
	-	SWEEP		- <b>``</b>			~ ~ ~		TE 7/26/9	
	S	CREEN SIZE:	11.2	5		<b>/</b> / <del>/</del> /~/~			TE	
NOTE: When pe indicate	reference refle					1 2	thon	A DAM_ DA	TE <u>////2</u>	<u>\$[90</u>
			•		· · · · · · ·			/		-
ADDITIONAL RE	<b>A</b> 1	RH	1	BACK R	EFLF	ECTINO -	9.6 @ '	80% PSH	: 40JB	
1/2T - 4C								Side C	•	-
								E - CLOS		
3/4T - 60				ter in a star i sa		· · · · · ·				

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#### EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING

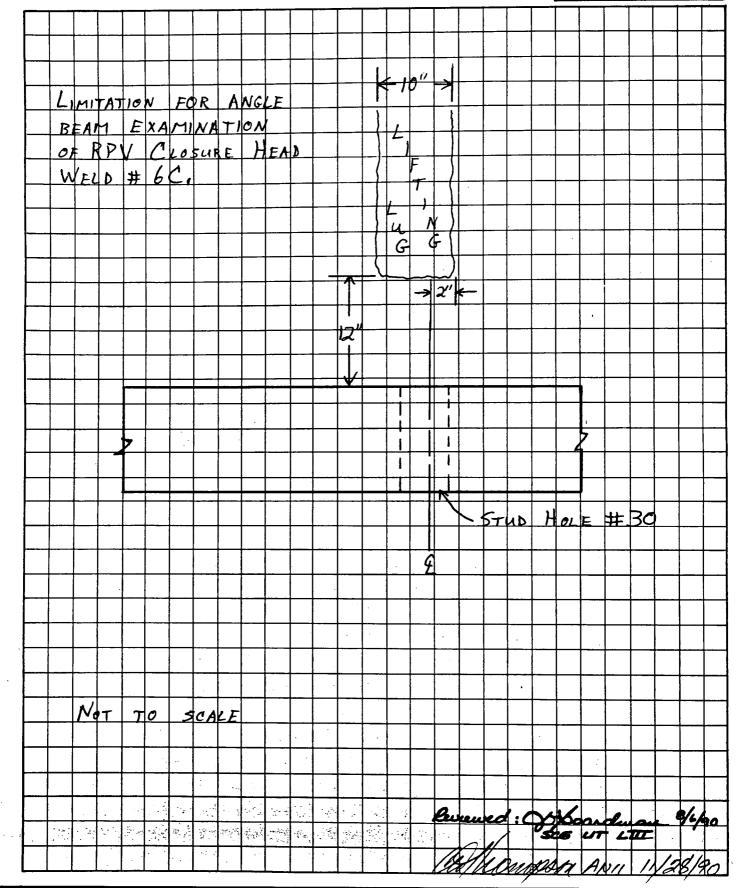
PG. 2 OF 2 REPORT # 40-SCE- UT-004

#### INSERVICE INSPECTION SKETCH SHEET

LINE AND WELD(S) RPV WELD #6C DATE \_\_\_\_\_7/22/90

DRAWN BY: -==-

PROJECT SONGS-1



MATERIALS TESTI			ON SERVICE		PAGE	
	DATA S	HEET NO DURE SCE	-UT-575	5-2*	DATE REV.	
SYSTEM CLOSURE HEAD		GAUGE				
				NONE	<u></u>	
LOSURE HEAD TO FLANGE, WELD 6C	88°F	2048	100			
EROM STUD HOLE \$28 TO \$1			JEE R	EMARKS FO	K LIMITA	<u>, 110</u>
	-/	/				
	880			NOT	CHES 1	
CAL BLOCK NO. <u>CB-0031/50104</u> THK <u>9"</u>	XAM COV	2048 BAGE	<u></u>			
			ERENTIAL JA	SIZING V	OTHER	NIA
SEARCH UNIT			INSTR	UMENT		
				SDN Model -		
	Serial No.	<u>31459</u>	-1146 Zaus	Cable L	ength <u>6 BL</u>	IC TO
	Frequency	DROAD I	DAND	Reject - Dampin	<u> </u>	
	•	oarse		Dampin Fine		
Couplant ULTRAGEL TI-Batch No	Amplitude -	% Full Scree	en Height <u>74</u>	THOLE	<u>e</u> 80.70	1-21
DAC PLOT-TIME 11:45 AM PM			CALI	BRATION CHI	ECKS	
100				20% (dB)	SWEEP	
90	<mark><mark>}</mark>  ┍-</mark>				INITIAL L	.OCA
80 *	┝┥╎	TIME	YES	NO	YES	
70		310 pm	$\geq$	NIA	$\geq$	~
60 60	╊╼┨ L					
% FSH 50						
40		(AMINER(S)	:		•	
30 *		Steve St	undler	_TC-1A LEVE	I	DATE
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10	<b>2</b> .	1 1		- 10-1A LEVE	:L	JAIE
0 1 2 3 4 5 6 7 8		VIEWED BY	' <b>:</b> -	0	·	
0 1 <b>2</b> 3 4 5 6 7 8 1/4T 1/2T SWEEP 3/4T NOTCH	5 JAT 1.	M.O.	<u> </u>	fr DA	TE <u>7/26/9</u>	10
SCREEN SIZE: 11.25" De	pth 2.	W.Q.G	Anny -	ZZ DA	TE	90
NOTE: When performing examinations where no DAC is re	əquired,	1	~ //	A BOLADA		
indicate reference reflector location and amplitude			/	DB DIFFE		-
ADDITIONAL REMARKS #SOI-XXVII-22.6 REV.		Hou	e and the	,5/4T HOLE	TWROUGH TH	ECL
SCANNED ONE SIDE ONLY-CLOSURE HEAD SI A GINCH X YINCH AREA AT OUTER END ON	F SCAN P	ATH WAS	OBSTRUCT	D DUE TO	ITETING	1114
			······	90-5CE.UT	And the Contract of the Contra	~~``

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# EBASCO SERVICI CORPORATED DATA SHT NO. <u>90 - 50</u> UALITY ASSUR/ INSERVICE INSPECTION RVP VT-1 / VT-3

······			
STATION San Outston	UNIT NO.		DATE 7-28-90
ASME SEC. XI CLASS	SECTION XI CATEGORY	TW13	SEC. XI ITEM NO. B-1-3
COMPONENT DESCRIPTION URAN Guide	Le Structure Deserve		TION AREA SEE Below
EQUIPMENT Misi Rover 1	NK_T	[V]	T-1_N/AVT-3
PROCEDURE NO. SEE RUT-515-18	REVISION	VI	DEO TAPE NO.
RELEVANT CONDITIONS	LOCATION	CC	DMMENTS
	2- Comments	Accessible .	Areas EXAMINED
PHYSICAL DAMAGE	NRI		
WEAR			
COR ROSION			
EROSION			· · · · · · · · · · · · · · · · · · ·
MISSING/LOOSE PARTS			
STRUCTURAL INTEGRITY			
MISALIGNMENT			
CRACKS	NRI		
OTHER	N/A		
COMMENTS:			
	/		
	Note		
SOI-XXVII-ZZ.4, REV.O			
EXAMINER / LEVEL	Twent 1	BALLES LULS	DATE 7-3090
REVIEWED BY / LEVEL Marthan	THATE 8/1/90 AUTHORI	ZED INSPECTOR	MIPHON DATE 11/28/90
101 Revier	·····		
Kevie	ver V Cole SLE VI	L-111 8-11-70	

DATA SHT NO. 90-50E-VT- 004 EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING **INSERVICE INSPECTION** 1512-B/10-87 **REMOTE VISUAL EXAMINATION SYSTEM RESOLUTION VERIFICATION FORM** Sal Odofre Unit No. \_\_\_\_ Date 7.2550 Station\_ -----System Description Tini Lover MKI System capable of resolving 1/32" blackline on an 18% neutral Satisfactory Grav Card: □Unsatisfactory Approximate Maximum Distance\_\_\_ Date\_ 7-28 98 Ebasco VT Level III Approval 81.190 DATA SHT NO. 90-50E-VT-001 EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING **INSERVICE INSPECTION** 1512-B/10-87 **REMOTE VISUAL EXAMINATION SYSTEM RESOLUTION VERIFICATION FORM** Sad Astator \_\_\_\_\_Unit No.\_\_\_\_\_\_Date\_\_7-28-90 Station MKT Pro Exam System Description \_\_\_\_\_\_\_\_ System capable of resolving 1/32" blackline on an 18% neutral Satisfactory Gray Card: Approximate Maximum Distance\_ 7-28-90 Ebasco VT Level III Approval Date

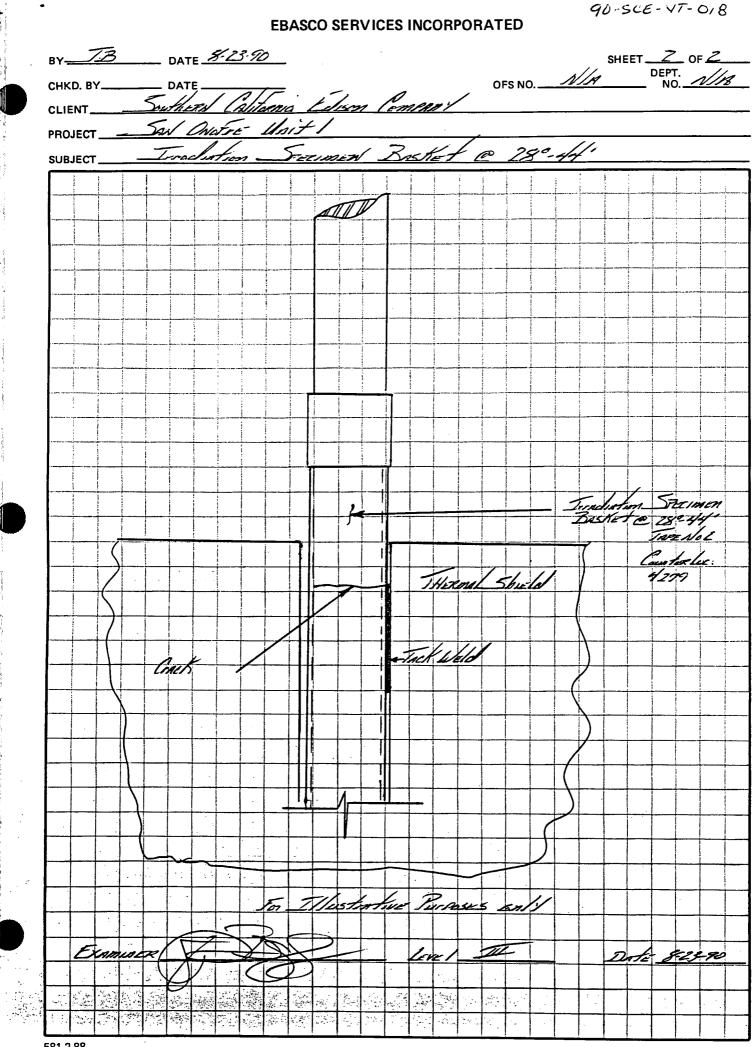
512/10-87	QUALITY ASSURA INSERVICE A RVP VT-1	ECTION	DATA SHT NO. <u>90-56</u> Te lef 2
STATION Son One For-	UNIT NO.	1	DATE 7-30-90
ASME SEC. XI CLASS	SECTION XI CATEGO	DRY B.1.17	SEC. XI ITEM NO. Bul 3
COMPONENT DESCRIPTION	Bernel External		AMINATION AREA
EQUIPMENT Mini ROVER			VT-1 VT-3
PROCEDURE NO. Sel-XXVII-22.1	REVISION		VIDEO TAPE NO. Z
RELEVANT CONDITIONS	LOCATION		COMMENTS
LIMITATIONS	Non is	T. 1. 1.	stal at Custic Leaster
PHYSICAL DAMAGE	NRI	4219. June	La Fullel
WEAR			Video Tree on 8-23-90
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EROSION	· , •	and an a for the back	and the second of the second of second of the second second second second second second second second second se
MISSING/LOOSE PARTS			
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MISALIGNMENT	N'N'I		,,,,,,, _
CRACKS	RI		······································
OTHER	NRI		
COMMENTS:			
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			(La vana (12)90)
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EXAMINER / LEVEL	Tur Bauel	<u> </u>	DATE 8-23-90
REVIEWED BY / LEVEL		AUTHORIZED INSPECTOR	DATE

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90 SCE- VT- 018

CHKD. BY	DATE Suthern (1)	There In	on Company	OFS NO	N/N	DEPT. NO2
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<b>512/10-87</b>	QUALITY ASSURA INSERVICE INSPE RVP VT-1 / V	CTION	DATA SHT NO. <u>90-506</u> 018
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STATION Son ONOFor-	UNIT NO.	· · · · · · · · · · · · · · · · · · ·	DATE 7-30-90
ASME SEC. XI CLASS	SECTION XI CATEGORY	B.1.17	SEC. XI ITEM NO. BH-3
	arm Externe		AMINATION AREA
EQUIPMENT Mini Rover			VT-1 VT-3
PROCEDURE NO. Jol-XXVII-22, A	REVISION		VIDEO TAPE NO. Z
RELEVANT CONDITIONS	LOCATION		COMMENTS
LIMITATIONS	Non 15-	Indication las	steel at lauster lecotion
PHYSICAL DAMAGE	NET	4219. Jud	anter Friend chinese
WEAR	· · · · · · · · · · · · · · · · · · ·		Video Tare on 8-23-90
CORROSION			Aue Sce-BVT-575-1 B.1
EROSION			
MISSING/LOOSE PARTS	· · · · · · · · · · · · · · · · · · ·		
STRUCTURAL INTEGRITY			
MISALIGNMENT	NRI		· · · · · · · · · · · · · · · · · · ·
CRACKS	RI		
OTHER	NAI		
COMMENTS:	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
	None		
nate Nate			a. Herton Action
		( 200	- NCR # 900801900
			KLa Voug 9/1/90
	Town Basel I		DATE 8-23-90



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		INEERING	DATA SHT NO. 90-SCE
1512/10-87	INSERVICE INSPECT RVP VT-1 / VT-		PG. LOF5
STATION Son ONotor	UNIT NO.		DATE 7-30-90
ASME SEC. XI CLASS	SECTION XI CATEGORY	B-N-3	SEC. XI ITEM NO. B. 1.17
COMPONENT DESCRIPTION	- Barrel		EXAMINATION AREA
EQUIPMENT Mini Rover	Binaculars		VT-1_ <i>N/R</i> X
PROCEDURE NO. Sol-XXVIII-22,4	* REVISION		VIDEO TAPE NO. Z And 3
RELEVANT CONDITIONS	LOCATION		COMMENTS
LIMITATIONS	Ser Comments	all and	sible Areas Examined
PHYSICAL DAMAGE	See Comments		from of love Barriel - 2 of
WEAR		Hot Lice No	1 1 1 2 2 1 1 1
CORROSION	NRI	Exeminen	with Binsey loss
EROSION	NRI		Brocerchuse See-RVT- 575-1 R.I
MISSING/LOOSE PARTS	Set Comments		Barriel Heros to Cost Barriel
STRUCTURAL INTEGRITY	See Comments		AMINER NRI
MISALIGNMENT	NRI		Tel Support Block's NRI
CRACKS	See Comments		
OTHER	N/IA		
COMMENTS: Flarvaral Fistures RI Ser Inadiation Serciment Baske Thermal Shield Surrant B. Suronclars Cover Surrant Damager Bolt Lacking	TS RI SEE PG 2 of 5 Clocks SEE PG 50F5 RI	Irxadia t. 131° 15' These mai	Fixture & 120° AIRI for Servinens & 28°14', 32° 54', 138° 15' ANO 151° 16' NRI Shirld Surnort Block C 20° 1' 180° NRI

" 300 ° LEG TAPE NO.3 Counter Location 1075

PAGE 10F5

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EXAMINER / LEVEL	ADD	F Junk	Bauer IVII	T I	DATE 5-6-90
REVIEWED BY / LEVEL	MQ. John	DATE 8-6-40	AUTHORIZED INSPECTOR	allonson	DATE 11/28/90
	LI TI	- Leviewed	Tape#2 Cher	SLENT L-IT	8-11-90
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SUBJECT Elevend Blacks														1300	1	[	2991	- 11	<u> </u>								
	PROJECT			S.A.		<u>On</u>	154	RE-		<u>//</u>	<u></u>	<u> </u>															
	SUBJECT_				<u>T</u>	XU	TA I	<u> </u>	$\mathcal{B}$	lac)	3										_						
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System capable of	f resolving 1/32'' blackline on an 18% neutral
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DATA SHT NO. 90-SCE VT-011 **EBASCO SERVICES INCORPORATED** QUALITY ASSURANCE ENGINEERING 1512-B/10-87 **INSERVICE INSPECTION REMOTE VISUAL EXAMINATION SYSTEM RESOLUTION VERIFICATION FORM** Station Sal Onlater Unit No.\_\_/\_ \_\_\_\_\_Date\_\_\_\_<del>7-90</del> w.fl. In System Description \_\_\_\_ 7.14 Camera Zcom Pris- Elamino System capable of resolving 1/32" blackline on an 18% neutral Satisfactory Gray Card: □Unsatisfactory Approximate Maximum Distance\_\_\_\_ 10 Ebasco VT Level III Approval Date\_ 5-1-90 8/6/90 DATA SHT NO. 10-56 E-VT-012 EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING **INSERVICE INSPECTION** 1512-B/10-87 **REMOTE VISUAL EXAMINATION SYSTEM RESOLUTION VERIFICATION FORM** Station Sal Onotre \_\_\_\_Date\_ &-4-90 Unit No.\_\_\_ u.H MID CA DX Zoom Lons System Description System capable of resolving 1/32" blackline on an 18% neutral Satisfactory Unsatisfactory Gray Card: 10 F3 Approximate Maximum Distance\_ Ebasco VT Level III Approval Date\_

	RVP VT-1 /	vi-5	
STATION Sal Cristien	UNIT NO.	1	DATE 5-4-90
ASME SEC. XI CLASS	SECTION XI CATEGOR	Y B-N-1	SEC. XI ITEM NO. B.1.15
COMPONENT DESCRIPTION	Prosent Vized Ches	ure Heno	EXAMINATION AREA SEE Commonts
EQUIPMENT Parti T.T. Pamera	with DX toom Len	5	VT-1 VT-3
PROCEDURE NO. 4 Sol-XXVII-22.4	REVISION	······································	VIDEO TAPE NO.
RELEVANT CONDITIONS	LOCATION		COMMENTS
IMITATIONS	Sez- Comments	Examination	Anna Undersicher of Kenis
PHYSICAL DAMAGE	NRI	nichuduac	Clark SurFace and CRUni
VEAR		Gaider Tu	hes Costes and Pertero has
CORROSION		to Heno	whilds. All Accessible Area
EROSION	, -	Visua/14	EXAMPLED.
MISSING/LOOSE PARTS			
STRUCTURAL INTEGRITY		X Sec-	eVT-575-1 8-1
MISALIGNMENT			
CRACKS			······································
DTHER	NRI		

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AUTHORIZED INSPECTOR

SLE VT LITT

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DATE 8-6

Reviewed Tape #4

DATE 8-4-90

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8-15-90

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EXAMINER / LEVEL

**REVIEWED BY / LEVEL** 

	RVP	VICE INSPECTION VT-1 / VT-3		
STATION SAN ONOFre		o. /	D	ATE 7-28-90
ASME SEC. XI CLASS	SECTION XI C	ATEGORY THE		TEM NO. B-N-3
COMPONENT DESCRIPTION Reactive.	Pressure Vessel		EXAMINATION ARE	A Con Barrel Interence
EQUIPMENT Misi' Rover			VT-1_ <i>N/R</i>	
PROCEDURE NO. SCE-RUT-STS		1	VIDEO TAPE	NO. /
RELEVANT CONDITIONS	LOCATION		COMMENTS	· · · · · · · · · · · · · · · · · · ·
LIMITATIONS	None	P./	lacation in Pro-	die of
PHYSICAL DAMAGE	NRI		z Core Suppor	PL-
WEAR	<u></u>		~	JURIE
CORROSION				
EROSION			······································	······································
MISSING/LOOSE PARTS				
STRUCTURAL INTEGRITY			-	
MISALIGNMENT				·····
CRACKS	NRI			
OTHER	State Commenter	afe -		
COMMENTS:		·		1 1
		Worter Flow Mart	's Observe an	Unor Ala and
		Kers Contra	at Barn	1
	ـ	Woter Flow Mark. Rests Centres .	of Dase-	
	-	Kers Costar .	ot Dec -	
	-	Kers Contar .	et Bre-	
	- -	Kerts Carthan .	et Bese-	
		Kerts Certher .	et Bese-	
(*) SOI~XXVII~27 A Prin	- -	Kerts Cartha	et Bre-	
€ SOI - XX VII - ZZ.4, REV. D	-	Kerts cartha	et Bese-	
SOI - XX VII - ZZ.4, REV. D EXAMINER / LEVEL		Rests Central	Z-	DATE 7-3050 DATE 11/28/00

12/10-87	QUALITY ASSURATE ENCLOSED INSERVICE INSPECT RVP VT-1 / VT	
STATION Sal Chatre	UNIT NO.	DATE 7-30-90
ASME SEC. XI CLASS	SECTION XI CATEGORY	B-N-1 SEC. XI ITEM NO. B.1.15
COMPONENT DESCRIPTION	Pressure lassel Inter.	
EQUIPMENT Mini Marie		VT-1 VT-3
PROCEDURE NO. 2 Sol-XXVII-22.4	REVISION	VIDEO TAPE NO. Z
RELEVANT CONDITIONS	LOCATION	COMMENTS
LIMITATIONS	SET Comments	All Accessible Areas Examines
PHYSICAL DAMAGE	NRI	1 Cresent Wrench 2 Pieces of
WEAR		Metal Located in Bottom Hick
CORROSION		Items Retioner And I and
EROSION		Aug 2, 1990
MISSING/LOOSE PARTS		Normal Amount of Losse Partical declaris
STRUCTURAL INTEGRITY		*EBASCO Processure No_SCE-RVT-575
MISALIGNMENT		Redision O
CRACKS	NRI	
OTHER	See Comments	
COMMENTS:		
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EXAMINER / LEVEL Joseph Baster	V 14 TT AND	DATE Aug 2 19

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	RESOLUTION VERIFICATION FORM	
Station	Unit No Mini Rover Tre-	Date7- <u>30-70</u>
System Description	Mini Rover Pre-	Exam - Core Banrel
Versel 1	Twoti -	······
	· · · · · · · · · · · · · · · · · · ·	
System capable of r	esolving 1/32" blackline on an 18% neutra	al .
-	atisfactory 🗆 Unsatisfactory	
Approximate Maxim	um DistanceZFF	
	$\sim$	-
Ebasco VT Level III		Date7-30-F0
	W.John 8/	/90
· · · · · · · · · · · · · · · · · · ·	······································	
1512-B/10-87	EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING INSERVICE INSPECTION REMOTE VISUAL EXAMINATION SYST RESOLUTION VERIFICATION FORM	
Station	Unit No	Date7_30-90
Station		Date <u>7-30-90</u>
		·
		·
System Description		. Rover
System Description	- Intermetione - Mini	. Rover
System Description	<u>Turburnellarte</u> - Mini <u>Veccel Turb</u> esolving 1/32'' blackline on an 18% neutra tisfactory □Unsatisfactory	. Rever

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### VISUAL EXAMINATION DATA FORM VT-1



EBASCO

STATION	,	UNIT NO.		DATE
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ASME SEC XI CLASS		SYSTEM		ISUE LITIO
ASME SEC ALCLASS		STOLEM		
1		RC_	5	
		PROCEDURE & REV.		· · · · · · · · · · · · · · · · · · ·
Alla		4	- 73	
IV IN		+_501-XXVII	- 22.B Ker	<u>′</u> 0
COMPONENT DESCRIPTION	./		1	
217	1/ 1 1/	1/ 1/		
Kenctar Fressure	hossel lasure -	KEND WA	shees	
SECTION XI CATEGORY	SECTION XI ITEM NO.			
BG-1	31.10		NR	
		LEVEL	112	
		)		
BAGIEN	A AL	TT		
	A Charles	PYAAA		
	VISUAL	. EXAM		
OBSERVED CONDITION YES NO		REMARKS	3	
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	4		/	
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	rl		<i>Y</i>	
GOUGES	k			
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	r			
OTHER (DESCRIBE)				
	Pn.	101 11		
COMMENTS AND DISPOSITION BY LEVEL	I VT-1 EXAMINER:	Closure Hos	nD /klæhe	es Nos. 29 -
3/2 Visuald Day	minin - No	Romalle	Inclust	
				<u> </u>
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* EBASCO Poredu	1 Sec.V.	-575-1		
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NAME	LEAD	EVEL II OR LEVEL III	<u></u>	DATE
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W.R. JOHNSON	A A A	from the		8-5-90
AUTHORIZED INSPECTOR	U DATE		DATA SHE	ET NO.
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### EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING

90-5EE-MT-002

## INSERVICE INSPECTION MAGNETIC PARTICLE EXAMINATION REPORT

PROJECT			PROCEDURE	REVISION
San On OFre Unit#1				575-1*
	a the	. 47		
Reactor Hend Studs 25	<u>7_incu</u>			AT DIRECT CONTACT
EQUIPMENT MANUFACTURER			MODE	
Parker Magnaflux SERIAL NO. CURREN	TYPE		PERAGE / NO. OF	A-400/ L-10 COIL TURNS
BII NA PARTICES' MANUFACTURER		) DC	N/A/12 N/A	
MagnaFlux (Magna glow)	BATO	сн <b># 90</b> А	OIK 14 AM	Green
		ICATION	LOCATION OF INDICATION	DEMARKS
	NONE	LENGTH (INCH)	(Use Sketch Sheet if Necessary)	REMARKS
5Tub - 29	$\bowtie$	NA		
STud-30	$\geq$	NA		
STyd-31	$\left \right>$	N' A		
STud-32	$\bowtie$	NA		
STyd-33	$\mid$	NA		
5Tud-34	$\left \right>$	NA		
5Tud-35	$\left \right>$	NA		
STud-36	$\bowtie$	NA	N	/A
5T4d-37	$\bowtie$	MA		
stud-38	$\bowtie$	NA		· · · · · · · · · · · · · · · · · · ·
stud-39	$\left \right>$	A	/	
stud-40	$\bowtie$	NA		
stud-41	$\bowtie$	MA -		
STud- 42	$\succ$	NA	/	
· · · · · · · · · · · · · · · · · · ·		-		
	A	A	101.	
Kingued Von SCE	S	Her	mat Level II	10/01/90
EXAMINER M.O				Dyte 7/30/90 DATE
Berleweday		2010 - 2010 2010 - 2010 - 2010 - 2010	IT	7-30-90
N.X. Johnn			REPORT NO. 90-SCE-MT-	DOZ 8/1/90
¥ 501- XXVII- 22.1	R	EV. D	Whompson AI	VII 11/28/90

6063A/1-90 EBASCO S MATERIALS TESTI		NCORPORAT XAMINATIO		3		OF
LII TRASO	NICCAL	RRATION DA	ΔΤΔ			
PROJECT San OnoFre Un, t+1	DATA S	HEET NO.	10-3CE-	<u>ui-010</u>	2 DATE	7/30/90
SYSTEM Reactor Head Studs 29 thru 42	PROCE	DURE <u>50 E</u>	<u>- 4T-s</u>	75- 31	REV.	
COMPONENT OR WELD IDENTIFICATION	TEMP	GAUGE I	D			DN
STuds 29 Thru 42	760	2048		N/A	¥* ———	
	11					
	-14-3	7				
CAL BLOCK NO. 3고기, 3고고, 4,43고 3 THK 36, 고기, 4-44	810	2048		NOT	CHES	SDHZ
	EXAM COV					AT
ID MO OD HO WHAT DO BASE MATERIAL					OTHER BOT	TOM HOL
SEARCH UNIT			INSTRU			
			lumer		1	<u> </u>
			-1146			
			Brand			
Size(s) Freq. 2.2511Hz	Rep Rate _	CURVEA	120 CURV	EB Curr	g <u>/v///</u>	CHRVE B
Angle Mode	dB Gain: C Primary Re	Coarse <u>a c</u>		Fine	<u>x - / e - (</u>	
Couplant <u>UITragel</u> Batch No. <u>9088</u>	Amplitude	- % Full Screen	n Height FLAT	г Воттом	HOLE @	80% FSI
DAC PLOT-TIME 1:36 AM, PM		r	CALIB	RATION CHE		
100	<b></b> ]		AMPL 2 OF INITIA			+ 10% OF OCATION
90 4" 21" BLOCK	┝─┤┍	TIME	YES	NO	YES	NO
80 CHRVE	╞╾╡╵┝	FINAL		N		N
10 8 36"	BLOCK	41:05 pm		4		#
60 21" BY OAM	J I L			K		
% FSH 50	$\square$					
40	E	XAMINER(S):				
30		M. Ori	ll	TC-1A   EVE	<u> </u>	DATE 7-30-
20 20 20 20 20 20 20 20 20 20 20 20 20 2	H "	Data	~ 0		L _ <u></u> [	
10	2.	gul -		TC-1A LEVE	┟╶╌╍╧╸╌╴╽	
	RE 9 10	EVIEWED BY:	0			
SWEEP	ັ 10 ູ1.	N.S.Jo	fin	DA	TE8/./9	D
SCREEN SIZE: <u>40"</u>	6	Vilon-	dman			
NOTE: When performing examinations where no DAC is re indicate reference reflector location and amplitude a		II arth	omplo		TE_//2	8/90
ADDITIONAL REMARKS * 501- XXVII- 22.10		0	7			(
* NO RECORDABLE IN	DICATION	NS		<b>.</b> .		
	Nc #2	9 THRU	42 IN	ORDER	TO ACI	IEVE
SCANNED ON BOTH ENDS OF STU					· .	
SCANNED ON BOTH ENDS OF STU 100% COVERAGE,						· •

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EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING PG, IOFZ

# INSERVICE INSPECTION MAGNETIC PARTICLE EXAMINATION REPORT

PROJECT			PROCEDUR	E REVISION
SAN ONOFRE U	NIT :	<u># (</u>	SCE-1	MT-575-1* 1
REACTOR CLOSURE H	FAD	Nuts		
		MAGNETIZAT	TON TECHNIQUE	ATA DIRECT CONTACT
EQUIPMENT MANUFACTURER		I		DEL
PARKER RESEARCH	TTYPE		PERAGE, NO. C	DA-400
		DC	N/A	N/A
MAGNAFLUX (MAGNAGLO)	•	тсн # 90	DAOIK 14AM	GREEN
THOMAPLUX (THOMAGLO)	1			
COMPONENT/WELD	NONE	LENGTH (INCH)	LOCATION OF INDICATION (Use Sketch Sheet if Necessary	
NUTS # 29 THRU 42	$\checkmark$	N/A	N/A	MT ON OD SURFACE
N/A	N/A			AND END SURFACES
				ONLY.
			NA	
			·	
		· · · · · · · · · · · · · · · · · · ·		
		-		
Remained Non SP.F.	- C	he l	Palt	Infantan
EXAMINER M.A.		y sich	LEVEL TT	
EXAMINER				7/29/90 DATE 6 06 1
Reviewed by			REPORT NO.	78990 
#5014 XX V 11-22.1 RI	ev. 0		90-SEE-MT	
		- AM	hompson AN	111 11/28/90

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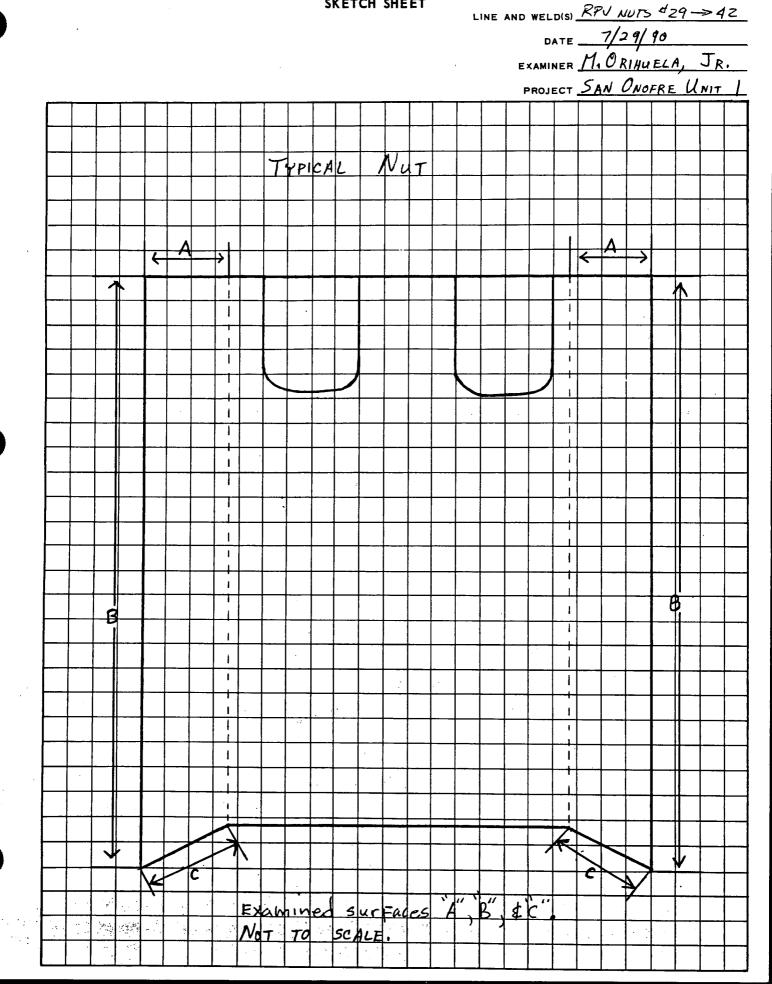
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### EBASCO SERVICES INCORPORATED QUALITY ASSURANCE ENGINEERING

PG. 2 OF 2

### INSERVICE INSPECTION SKETCH SHEET



MATERIALS TE	STING AND E		SERVICES	PAGE C		
SYSTEM REACTOR CLOSURE HEAD	PROCE	DURE 501-	XXVI1-22,10	REV. TCN		
COMPONENT OR WELD IDENTIFICATION	TEMP	GAUGE ID		BLE INDICATION		
NUTS #29 THRU 42	82°F	2048	NONE.			
	N					
		A				
CAL BLOCK NO. ROMPAS # 800893THK 1"	80°F	2048	NOTO			
	EXAM COV	ERAGE				
HID MA OD HA OWHAZ O BASE MATERIAL	AAAXIAL 1		NTIAL 12 SIZING 124	OTHER N/A		
	EQUIPMEN					
		KRAUTER	INSTRUMENT	USK-75		
Manufacturer <u>KB-AEROTECH</u> Style CAMMA ESingle Ma Dual		21459-1	146 Coble L			
	Serial No. <u>31459-1146</u> Frequency <u>BROADBAND</u> Reject <u>OFF</u>					
	1	<b>r</b>	Damping	- 114		
/ · · ·	dB Gain: C	<b>`</b>	• •			
			e eight <u>ISI Back Ref</u>	EATION Q 80		
Couplant ULTRAGEL Batch No. 9058	Amplitude -	% Full Screen H	eight <u>L Dren MEP</u>			
DAC PLOT-TIME _2:30_ AM	M		CALIBRATION CHE	CKS		
100			AMPL ± 20% (dB)	SWEEP + 10% (		
90 /3	I BACK					
80 REF		TIME	YES NO	YES N		
70		3:05pm	V N/A	~ N/1		
60			N			
% FSH 50			A			
40				L		
30		KAMINER(S):		<b></b>		
	1.	M.O.		L DATE 8		
20	2.	N/A	TC-1A LEVE			
		EVIEWED BY:	_			
SWEEP	ຳ1.		m TI DAT			
SCREEN SIZE: 10"	2(	Villar	Lucan LTT DAT	E 11/20/90		
NOTE: When performing examinations where no DAC			Ompton DAT			
indicate reference reflector location and amplitu	ude above. AN	111R	DAT PALOTI DAT	E 11/ XD/TO		
ADDITIONAL REMARKS SCANNED ON TO	OP SURFAM	E OF N	UTS #29 +ND	u 42.		
CALIBRATION PER ADDENDA No		ERACAM	Dearen A	~ 7~1 /a SCE-LAT-57		
ILALIDANIUW PER JIDUENDA /VC	) I .UF	LDAJLU	TROCEDUKE /			
				REV.		

Rockwell Rocketdyne D	International						SU	PPORT	TING DOC	UME
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71029	20020	355		360	New/1		Chū		204DP00	000
	ofre Nuci ice Inspe	lear Gener ction	ating	Stati	on	(SONGS)	Unit	1	Reactor	Ve
	Ultrasoni	.c, Magneti sonic Data	.c Part	cicle,	Liq	uid Pene	trant	, Vis	sual and	Loc
DOCUMENT T	YPE			KI	EY NO	UNS				
Data Pa	ackage				ISI	, RPV, N	DT, S	ONGS		
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# **Rocketdyne Division**

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# NO. 204DP000003 page 1. 1

REV	SUMMARY OF CHANGE	APPROVALS AND DATE
	CHANGE NO. 1	RaMaeshall 2/14/41
	Add ligament examination data, pages 20.1 and 20.2	June 2/14/51
	Add linearity checks, pages 29.1 and 29.2	
	Release Dat	2 214 RI ZC
	•	

734-C-1 REV. 12-84

	Change No. 1 No. 204DP000003 Page 20.1
	L INTERNATIONAL /ICE INSPECTION ANUAL ULTRASONIC ALIBRATION DATA PROJECT <u>SONGS (INIT / Cycle</u> ) CAL. DATA SHEET NO. <u>J</u> DATE <u>2-4-9</u> / PROCEDURE <u>SOJ-XXVII-20.7</u> REV. <u>P</u> TCN Q-1
COMPONENT OR SYSTEM <u>REACTOR VESSEL</u> EXAM DATA SHEET NO CALIBRATION BLOCK NO <u>VT #B</u> T	<u>FLANGE</u> PIPE DD (If Applicable) <u>M/A</u> —— COMPONENT TEMP <u>86°F</u> HICK <u>9</u> <sup>°</sup> TEMP <u>65°F</u> .
S FLANGE LIGAMENT AREA 0'BASE MATERIAL	CAN COVERAGE - STUD HOLES 29 TO 42 AXIAL CIRCUMFERENTIAL
SEARCH UNIT Manufacture <u>IVORTEC</u> Style <u>BN V-Z-12-2.25</u> Serial No. <u>6285</u> Size <u>34</u> BiFrequency <u>2.25 MHz</u> Angle <u>0° Mode L" wave</u>	INSTRUMENT Manufacture <u>KB</u> Model <u>USK-6</u> Serial No. <u>CIDSI 29</u> Cable Length <u>12'</u> Frequency <u>2.25 MHz</u> Delay <u>B</u> Rep Rate <u>XI</u> Range <u>G</u> dB Gain-Coarse <u>O</u> Fine <u>10</u> Primary Reference Response
Couplant <u>ULTRAGEL I</u> Batch No. <u>8439</u> 10:32 DAC PLOT - TIME AM, <del>PM</del>	CALIBRATION CHECKS
$ \begin{array}{c} 100 \\ 90 \\ 80 \\ 70 \\ \hline \\ 50 \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	AMPL ±20%(2dB) SWEEP +10% OF OF INITIAL AMPL INITIAL LOCATION TIME YES NO YES NO /300 / //
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Change No. 1 No. 204DP000003 Page 29.1

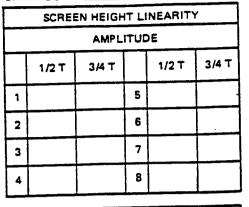
# PROJECT SONGS UNIT 1

# LINEARITY CALIBRATION CHECK SHEET PRE EXAM (Ligament)

SER NO. USK 6 ANNEL NO. <u>5/N C</u>109/79

#### SCREEN HEIGHT LINEARITY AMPLITUDE 3/4 T 1/2 T 3/4 T 1/2 T 1 5 20 50 40 100 6 2 40 32 80 16 7 3 32 24 12 64 9 8 19 25 50

PULSER NO. CHANNEL NO. \_\_\_



AMPL CONTROL LINEARITY

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3/4 T

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APPROVAL SIGNATURES

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EXAMINER Bichards LEVEL 111 DATE Feb 4. 1891

\_\_\_\_ DATE \_\_\_\_\_ 7-6-91

07:50

REVIEWERS .

FORM 746-G-13 NEW 4-83

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DATE

Change No. 1 No. 204DP000003 Page 29.2

# LINEARITY CALIBRATION CHECK SHEET

SCREEN HEIGHT LINEARITY AMPLITUDE

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RESULT

AMPL. CONTROL LINEARITY

3/4 T

Post Ligement EXAM

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PROJECT SONGS (INT )

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APPROVAL SIGNATURES

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DATE 2-6-91

FORM 746-G-13 NEW 4-83

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### August 30, 1990

### MEMORANDUM FOR FILE

### SUBJECT: Verification of Pressurizer Integrity San Onofre Nuclear Generating Station, Unit 1

The purpose of this memorandum is to transmit the results of the visual examination performed on the interior clad surface of the San Onofre Unit 1 Pressurizer on July 7, 1990.

Southern California Edison Company was notified in early June of the results of internal visual inspection of the pressurizer at the Haddam Neck plant. In the inspection, the licensee, Connecticut Yankee Atomic Power Company, discovered a multitude of hairline cracks in the cladding in the vicinity of the lower head. Further examinations from the outside indicated the possibility that three of the cracks penetrated through the cladding into the pressurizer base metal. One of these three indications required detailed analysis to satisfy ASME Code requirements for resolution.

As the San Onofre Unit 1 pressurizer design is very similar to the Haddam Neck pressurizer, an internal inspection of the clad surface in the lower head area was performed during the current Thermal Shield repair outage. This inspection also satisfied the inservice inspection requirements of the ASME Code, Section XI, Inspection Category B-I-2, "Interior Clad Surfaces of Vessels Other Than Reactor Vessels", which requires that at least one clad patch of 36 square inches be visually examined each inspection interval.

On July 7, 1990, with the unit in Mode 5, a remote visual inspection of the internal surfaces of the Unit 1 pressurizer was performed. The areas examined were the lower head in the vicinity of the surge nozzle, numerous heater penetration welds, the upper and lower heater support plate, and the accessible regions of the vessel wall between the heater support plates. No evidence of clad cracking was noted. A videotape record of the inspection was made during its performance. A copy of the videotape of the examination was furnished to the USNRC personnel during a visit to San Onofre on July 10, 1990. These results are documented on Westinghouse examination data sheet ISI-1-30A dated 07/07/90 (copy attached), and verified by the SCE NQC inspector as documented on Inspection Report IW-003-90 dated 07/17/90 (copy attached). In conclusion, the integrity of the San Onofre Unit 1 Pressurizer, as evidenced by visual internal examination, is satisfactory, and no further action is required.

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J. D. Boardman ISI Engineer

cc://J. A. Mundis R. Ornelas M. E. Motamed J. D. Boardman R. P. Delong SSSD Files

		W	ESTI	NGHOUSE NUCLEAR	SERVICE DIVISION
				INSPECTION SE	RVICES
	_			ISUAL EXAMINA	
PLANT SAN C	0 M C	FRE		UNIT	SKETCH IST-1-30A
SYST/COMP PRES	SURI	ZE	R	$(\pm,b)$	PROCEDURE SOL-W-ISI-8/0
EXAMINER Hame	r	<u>.                                    </u>	علع	busso	PROCEDURE <u>501-W-LSL-8/0</u> DATE <u>7-7-90</u>
	LEVE	LI		5	
IDENT.	F	RESUL	тs		DEMARKE
NUMBER	NI	NRI	RI	VISUAL AIDS	REMARKS
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	<u> </u>	ļ	ļ		OR LOSS OF INTEGRITY ON
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<b>CE</b> Southern California Edison Com	pany
SAN ONOFRE NUCLEAR GENERATING STA	Heport No. /// VI) 54/10
INSPECTION REPOR	Pageof
Supplier	_ Purchase Order No
Unit No. I Quality Class SR	_ Inspection Date 7/17/90 Time 1300 - 1400
Component Description PRESSURIZER LOWER	Work Order No
HEAD INTERNAL SURFACE	
Equip. Tag/Serial No.	
Location CONTAINMENT	
Contact/Dent JEHA BOARDMAN SYSD	NCR_MA_CAR_MA_DCP_MA
BEPORT SUMMARY THE BIRPOSE OF T	LIS INSPECTION REPORT 15 TO DOCUMENT
CASER HATIONS NOTE D DURING RE	view of the "CLADDING INSPECTION
	UIT   PRESSURIZER LOWER HEAD INTERNAL
	BY JOHN BUTCHER, SITE SERVICES DEPT.
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	VERE MADE AND THEIR CORRESPONDING
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720-729 AND 787-	805 10 10 10 10 10 10 10 10 10 10 10 10 10
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4. BORIC ACID RESIDUE	NOTED ON STRENGTH MEMBER IN VIDEO
FRAMES 913-945	
5. BROKEN INSPECTION	LIGHT TIP NOTED LAYING ON PLATE
SURFACE IN FRAME	957.
Distribution:	
HOWARD NEWTON	•
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DA. HERBST JONN BUTCHER Inspected By_	<u> AKBloch (13)</u> Date 7/17/90_Stamp No. (13)
JOHN BOARDMAN Approved By	Brun Norman Date 7-18-90
COM	
"SEEKING CLARIFICATION, ATTENTION TO DETAIL	. "SURVEILLANCE""WITH""FORTHRIGHTNESS," Mr. Howard P.

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ITEM	NDE PROCESS	DATE	CODE Category	REMARKS
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C-2	VISUAL	*****	B-L-1/B5.6	CASING WELD (VOLUMETRIC WAIVED, INSTEAD PERFORM VT2 PER RELIEF REQUEST OF DOCKET 50-206)
C-3	VISUAL	*****	B-L-1/B5.6	CASING WELD (VOLUMETRIC WAIVED, INSTEAD PERFORM VT2 PER RELIEF REQUEST OF DOCKET 50-206)
CASING INTERNAL PRESSURE BOUNDARY SURFACES	VISUAL	8/28/90	B-L-2/B5.7	· ·
C-B1 thru C-B18	MUT	8/16/90	B-G-1/B5.2	•
C-B1 thru C-B18	MT	8/22/90	B-G-1/B5.2	
C-1WS	PT	8/18/90	B-K-1/B5.4	PUMP SUPPORT (VOLUMETRIC WAIVED, INSTEAD PERFORM PT PER RELIEF REQUEST OF DOCKET 50-206)
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C-2WS	PT	8/18/90	B-K-1/B5.4	PUMP SUPPORT (VOLUMETRIC WAIVED, INSTEAD PERFORM PT PER RELIEF REQUEST OF DOCKET 50-206)
C-3WS	РТ	8/18/90	B-K-1/B5.4	PUMP SUPPORT (VOLUMETRIC WAIVED, INSTEAD PERFORM PT PER RELIEF REQUEST OF DOCKET 50-206)
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		· .	BLACK LINE ON 1		TRAY CAP
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	T.V. MONITOR:	PANASON	IC WV5360		
	T.V. CAMERA:	ELMIRA	ETV-1250	WEM 0247	15
	PLANT:	SAN O	NOFRE UNIT	1	<u></u>
	DATE:	8-27	- 90		<u>,</u>
	LEVEL II:	JAMES	R DELBUSS	0	
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1		UNDERWAT	APPENDIX D FER TELEVISION SYSTEM	RESOLUTION	,
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2698F(08/14/1990)

SCE-PMS-1.1 REV 0

APPENDIX C (continued) VISUAL EXAMINATION REPORT VT 1 AND 3

DESCRIPTION SONGS RCP #C CASING INSP. DATE 8-28-90

UNIT\_\_\_\_\_\_SYSTEM/COMPONENT\_\_\_\_RCP - C EXTERNAL AND INTERNAL CASING

LOCATION PUMP "C"

REFERENCE DOCUMENT \_\_\_\_ APPENDIX B\_\_\_\_

APPLICABLE PROCEDURES/SPECS/DWGS SO1 - XXVII-3.11

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		PARAM		•		•
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AS MODIFIED BY NRC		<sup>*</sup>				
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OF RELIEF DATED 9-26-7						
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B-L-1, ITEN 85.7					I	· · · · · · · · · · · · · · · · · · ·
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EXAMINER Comments Mr. Du	al	in_	LEVE	L	••	DATE 8-27-90
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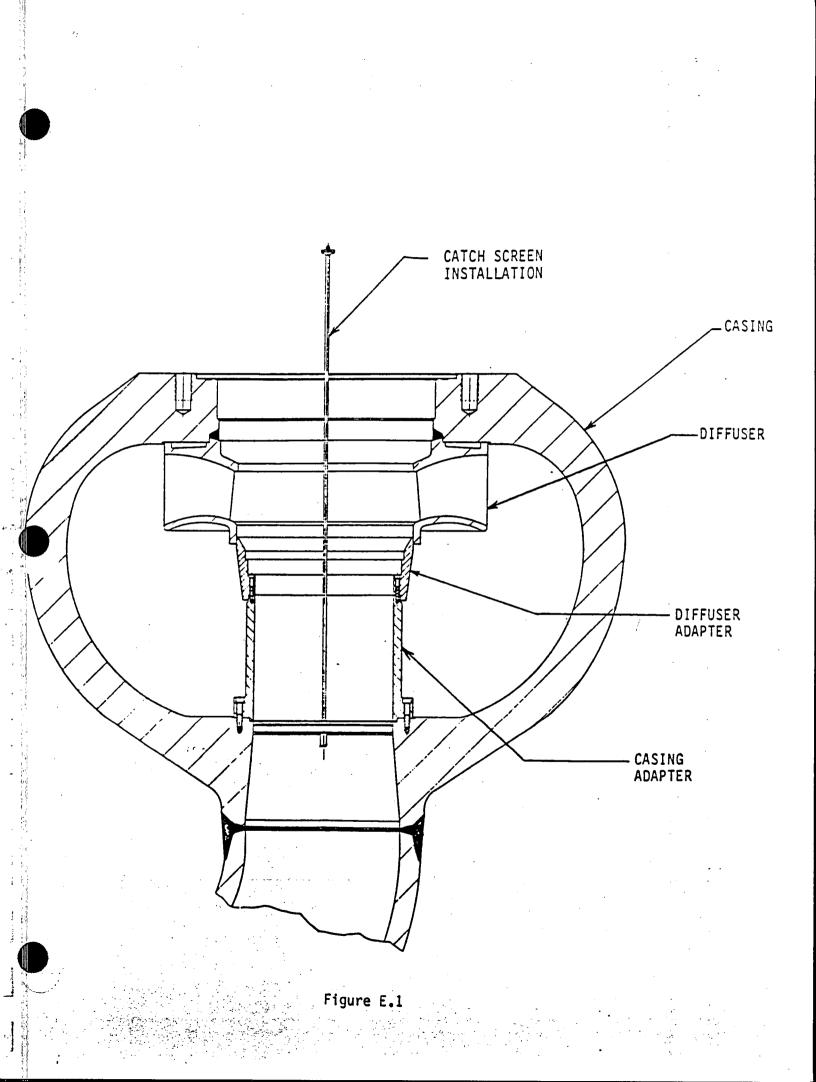
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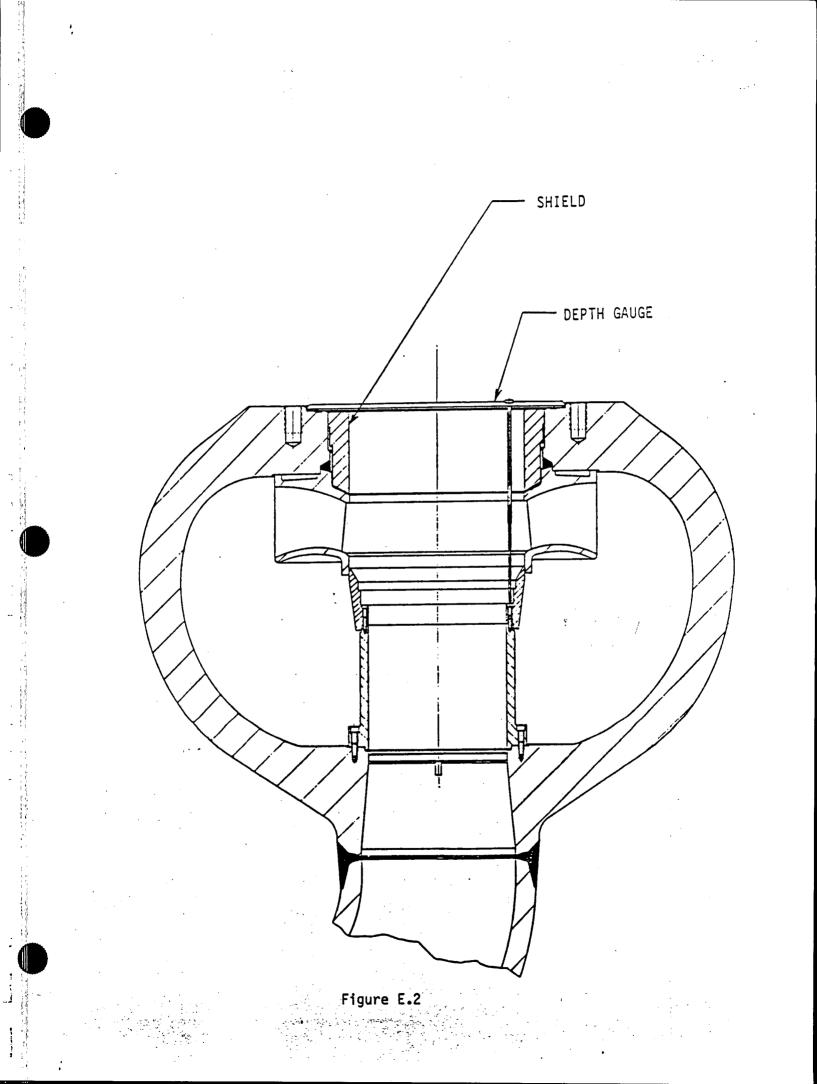
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rum; Suat	CASING C TON NOZZLE		APPENDIX D		:
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			CHECKOUT DATA SHE	ET	
		7/10-	WM. HUGHES		
	LEVEL II: •	KOHERT	WM. HUGHES		
	DATE:	9-3-	90		
	PLANT:	San Ono	FRE UNIT #1		
	T.V. CAMERA:	ELMIRA	ETV-1250		
	T.V. MONITOR:	PANASON	11C WV-5360	9" BLACK/WI	HITE
	T.V. LIGHTS:	2-400 G	DUARTZ LIGHT	5 4" × 6 F	4CE
•	VIDEO TAPE RE	CORDER: PANA	SONIC NV 8200	g E1001	
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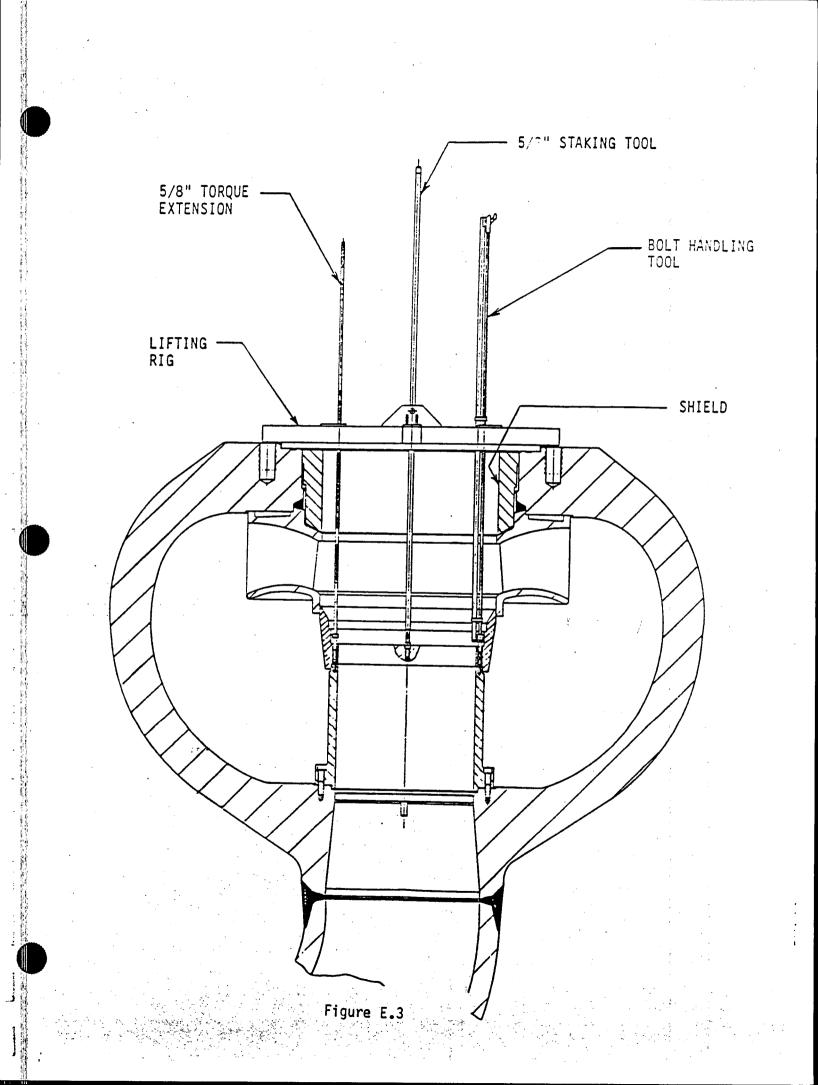
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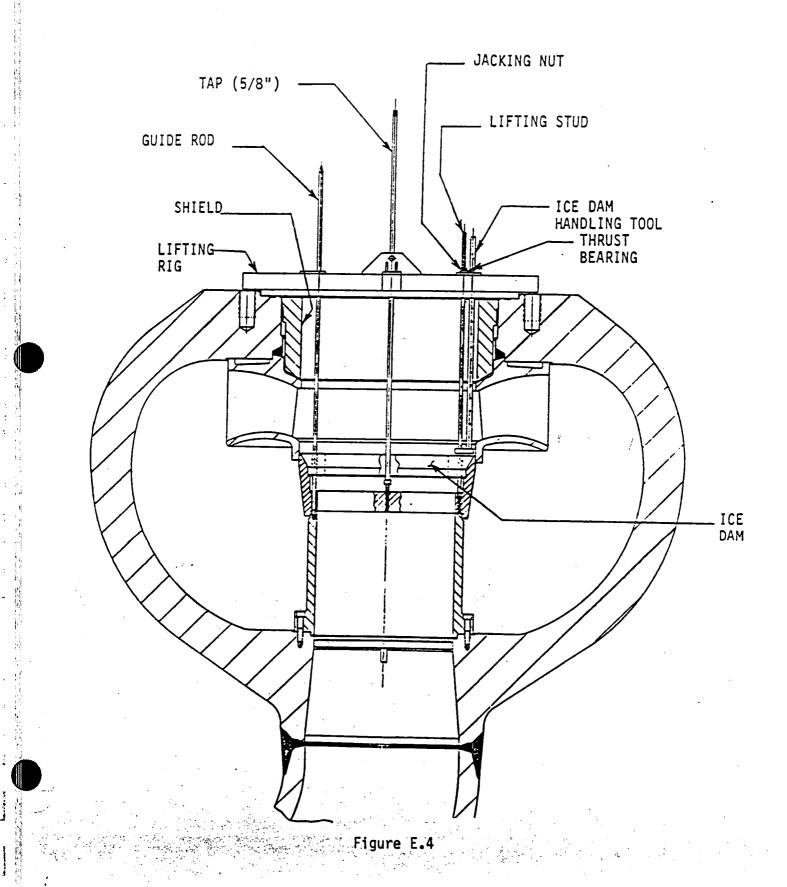
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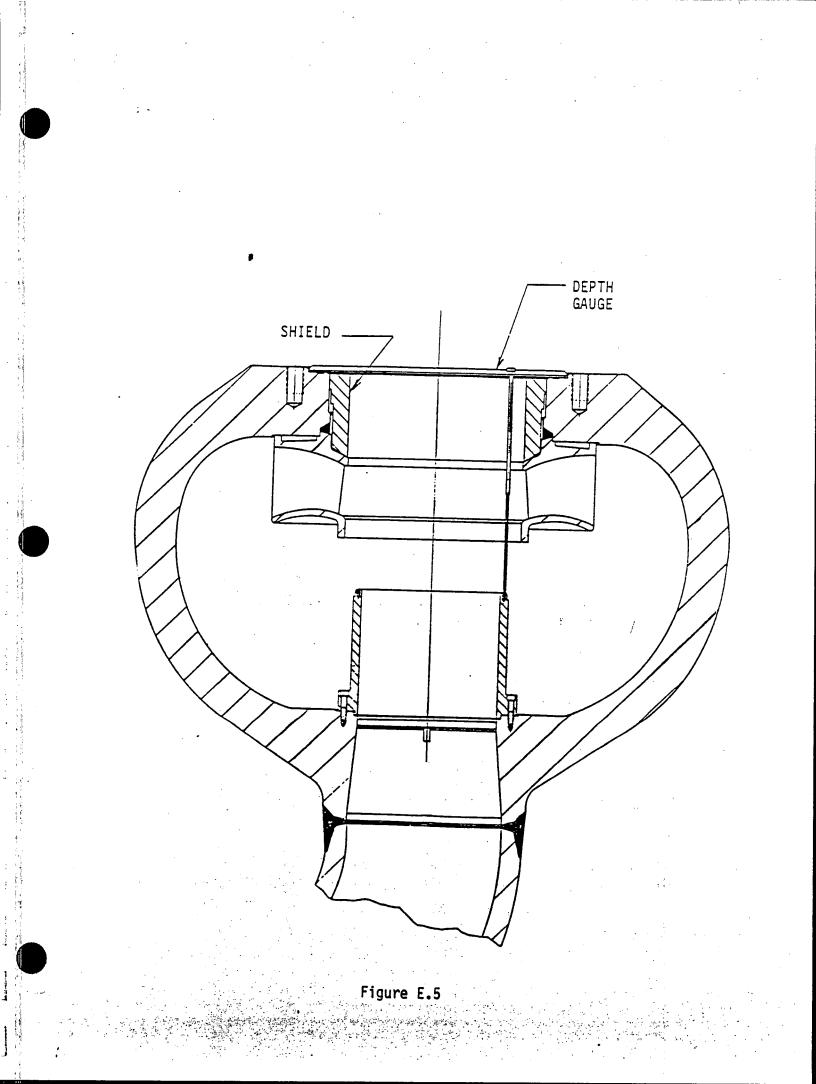
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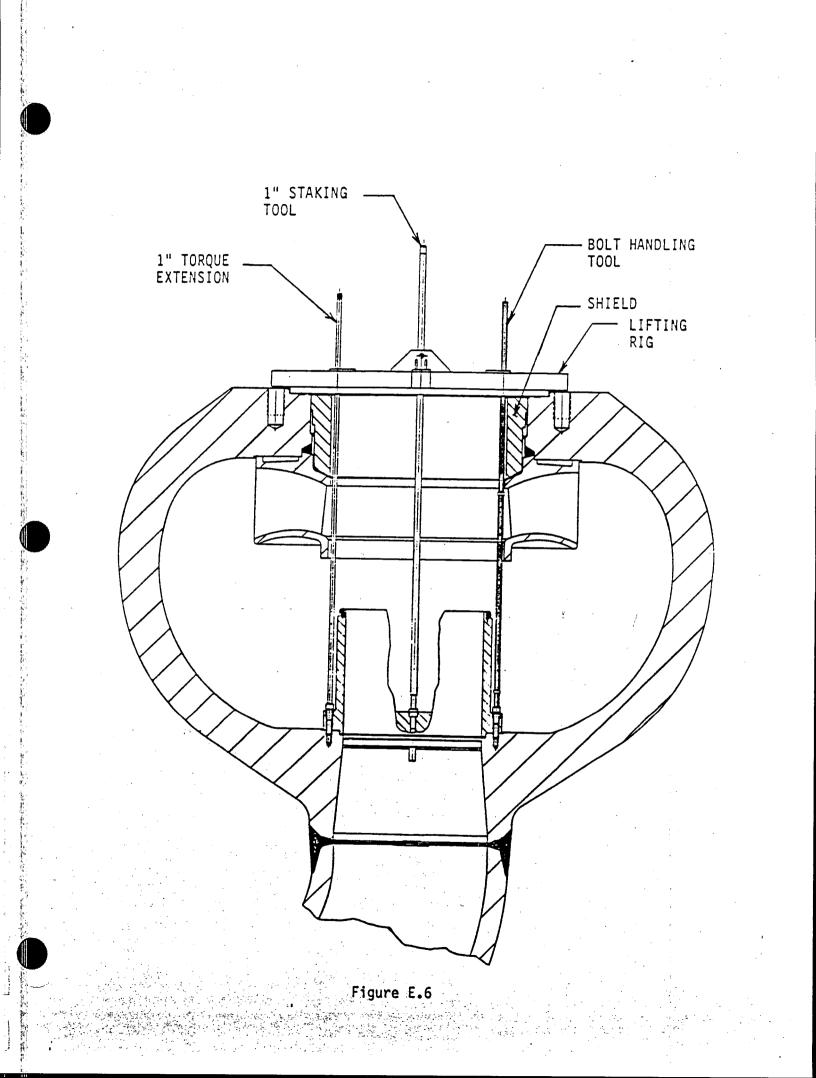












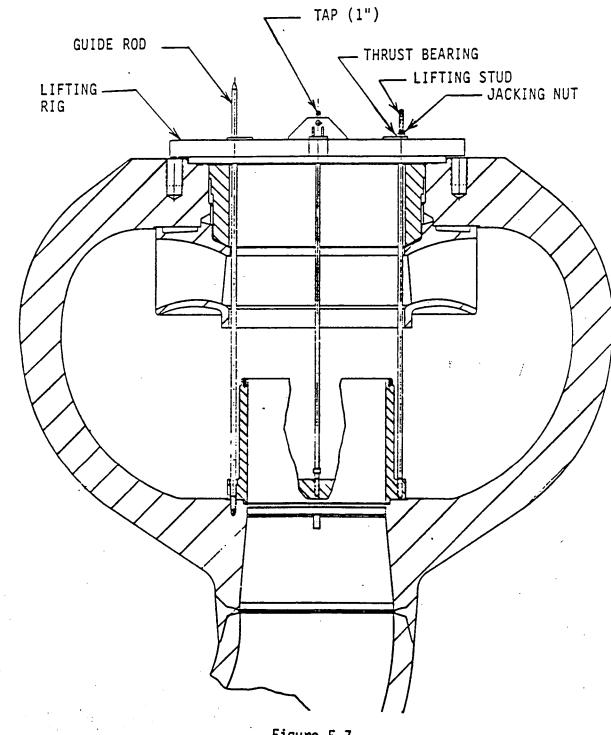
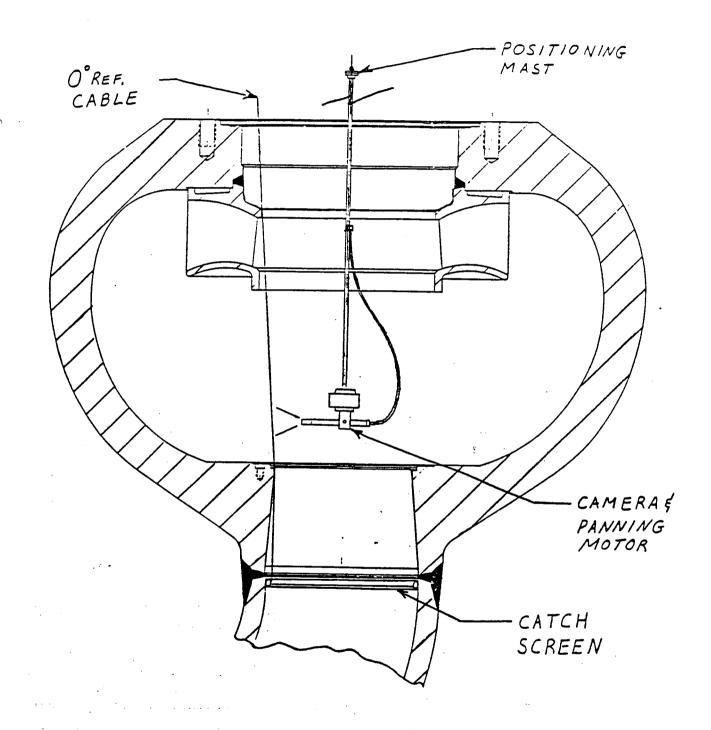


Figure E.7





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CAT         NUTS, STUDS, BOLTS LESS THAN 4" DIA.         STUDS, BOLTS 4" DIA. AND GREATER         CURVE "A"         FIRST SIGNAL FROM HOLE % F.S.         SECOND SIGNAL FROM HOLE % F.S.         CURVE "B"         SECOND SIGNAL FROM HOLE % F.S.H.         THIRD SIGNAL % F.S.H.         FOURTH SIGNAL % F.S.H.         FOURTH SIGNAL % F.S.H.         CALIBRATION CHECKS 1435 1516						URFAC ATION FIFT SIXT SEVE	BLOCK NO. TH SIGNAL _ TH SIGNAL _ ENTH SIGNAL		% F.S.H % F.S.H _ % F.S	н. н. 5.н.	
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EXAMINER     Date     8-18-90       P/T     BATCH NOS, CLEANER     M/T       CLEANER     MSQNAFLUX     89K03S       PENETRANT     MAQUAFLUX     89K03S       DEVELOPER     MAQUAFLUX     89K03S       REMOVER     MAQUAFLUX     89K03S       IDENT, NUMBER     PRESULTS     BATCH NOS, BLACK LIGHT       C - 2WIS     C       C - 3WIS     C       IDENT, NUMBER     NIL       NIL     NIL       REMOVER     NIL       NUMBER     NIL       NIL     NIL       IDENT, NUMBER     NIL       NIL     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL       IDENT, NUMBER     NIL <td>SYST/COMP</td> <td>SED</td> <td>e ተ በ</td> <td></td> <td>DOL DALT PINA</td> <td>»`C'</td> <td></td> <td>01-W-I</td> <td>TCN-0-1 SI-11/0</td>	SYST/COMP	SED	e ተ በ		DOL DALT PINA	»`C'		01-W-I	TCN-0-1 SI-11/0		
P/T         BATCH NOS.           CLEANER         MAGNAFLIX         89K03S           PENETRANT         MAGNAFLIX         89K04K           DEVELOPER         MAGNAFLIX         89K03S           DEVELOPER         MAGNAFLIX         89K03S           IDENT,         NIN RI         BLACK LIGHT           IDENT,         NIN RI         REMOVER           IDENT,         NIN RI         REMARKS           C - 2VUS         IDENT         REMARKS           C - 3WS         IDENT         IDENT           IDENT,         NIN RI         REMARKS           IDENT,         IDENT         IDENT           IDENT,         IDE	1 31317COMF. 1							- A-	18-90		
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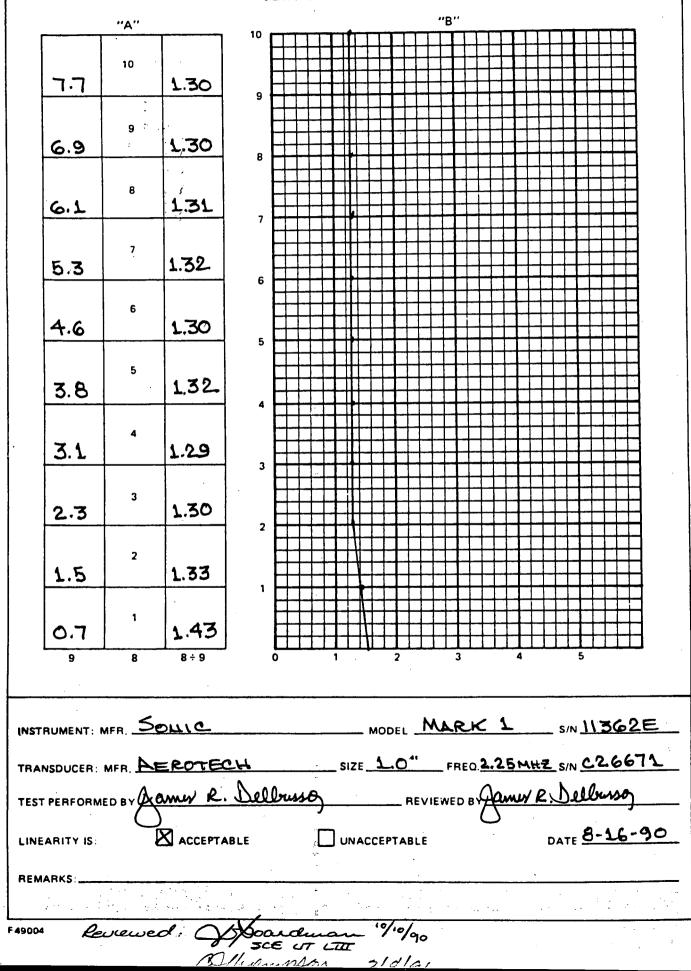
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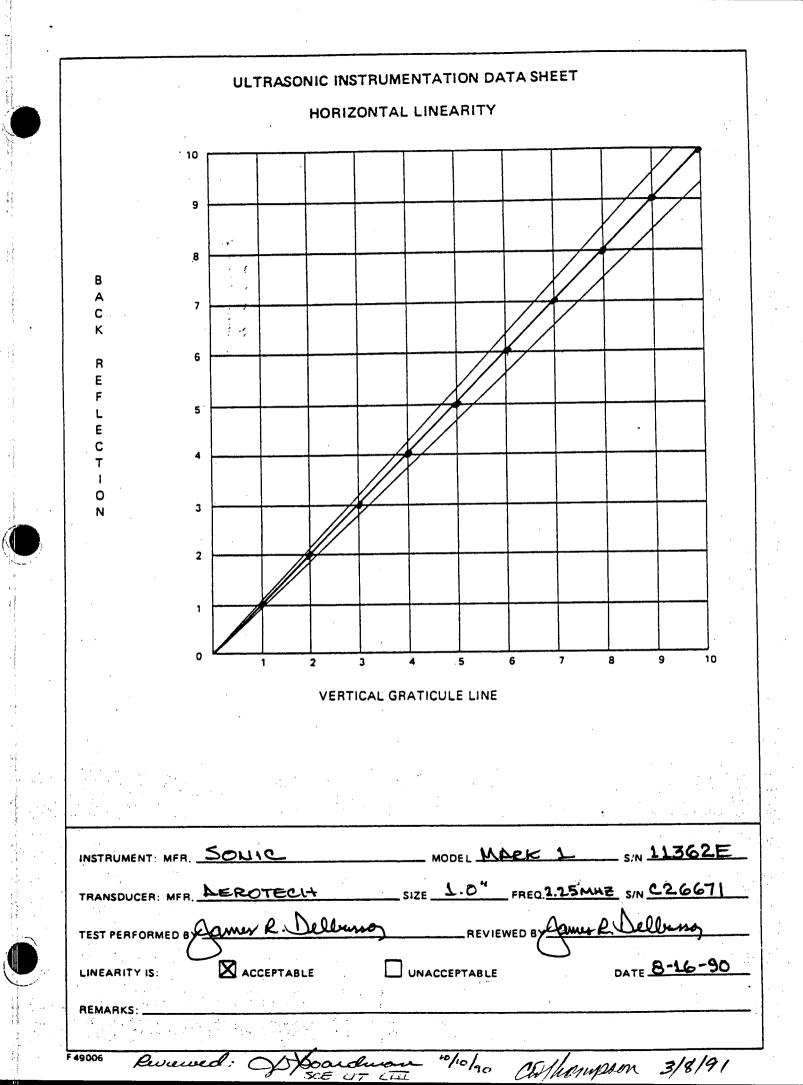
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# ULTRASONIC INSTRUMENTATION DATA SHEET

#### VERTICAL LINEARITY





MAIN STEAM HEADER SAF	SYSTEM ETIES & RELIE	FS		INDEX: 2.1 SKETCH/ISO: 2-19A-1 & 2-19A-2
ITEM	NDE PROCESS	DATE	CODE Category	REMARKS
PBP-253	UT	7/14/90	C-G/C2.1	AUGMENTED ISI-POSTULATED BREAK POINTS IN HIGH ENERGY LINES
PBP-254	UT	7/14/90	C-G/C2.1	AUGMENTED ISI-POSTULATED BREAK POINTS IN HIGH ENERGY LINES
PBP-263	UT	7/14/90	C-G/C2.1	AUGMENTED ISI-POSTULATED BREAK POINTS IN HIGH ENERGY LINES
PBP-264	UT	7/14/90	C-G/C2.1	AUGMENTED ISI-POSTULATED BREAK POINTS IN HIGH ENERGY LINES
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#### EBASCO SERVICES INCORPORATED **MATERIALS TESTING AND EXAMINATION SERVICES INDICATION DATA**

SHEET 2 OF 3

CALIBRATION DATA SHEET NO. 90-SCE-UT-003

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REPORT # 90- SCE-4T-003

VALVE FLOW TO OBTAIN THICKNESS UNABLE READIN THIS AREA  $(\mathbf{r})$ • 0, D, PIPE --(REDUCER) I,D, INDICATIONS ARE TYPICAL 4 WELDS PIPE TO VALVES NUMBERED CV 76, CV 77, CV 78 + CV 79 PBP-253, PBP-263, PBP-254, PBP-264 SEE ATTACHMENT No. 1. M.4.9. 10-9-90 two Spindler Revenued: ( LTT Colleonopson ANIASPO

#### EBASCO SERVICES INCORPORATED



210 Clay Avenue, Lyndhurst, NJ 07071-3507, (201) 896-5000

# ATTACHMENT NO.1 TO REPORT # 90-SCE-UT-003

The calibration standard supplied by SCE (UT-48) which was utilized to ultrasonically examine the 6" main steam reducer-to-valve welds (8" x 6" reducer to valve numbers 76, 77, 78 79) was lacking a 1/2 "T" hole for calibration of the axial scan. This hole is required for calibration per the 1974 Edition of ASME Sections XI and V with the Summer 1975 Addenda. Section V requires that the first point on the Distance-Amplitude Correction (DAC) curve shall be the 1-1/2 "T" (6/8 Vee) hole. Since a 1-1/2 "T" hole was unavailable, the 1-3/4 "T" (7/8 Vee) hole was used for the first point on the DAC (primary reference sensitivity). It is surmised that this alternate technique is more sensitive than the calibration achieved utilizing the 1-1/2 "T" hole since a longer metal path was involved. This alternate calibration provides more sensitivity to detect reflectors parallel to the welds than specified by the referenced Codes.

By extrapolating the DAC curve beyond the anticipated thickness range for 6" $\phi$ , schedule 120 pipe, 100% of the Code required volume was examined from one side only (due to reducer-to-valve configuration).

Additionally, a straight beam examination was performed in conformance with Procedure No. SCE-UT-S75-1 in order to supplement the "one-side only" angle beam examination.

\* WELD NO.'S PBP-253, PBP-263, PBP-264

NJ.Jahnon 10-9-90

Miguel Orihuela, Jr. Site Supervisor

<u>M.O. M. 7/19/90</u> Signature/Level <u>Date</u>

R. Paillaman UT Corporate Level III

Signature

<u>7/20/90</u>

7/27/90

W.R. JOHNSON Rockwell Level III

UT LIII SCE

C.D. THOMPSON

# Steam Generator Tubing Examinations Unit 1 Refueling Cycle 11

The results of the Steam Generator tubing examinations performed during the Unit 1 Cycle 11 Refueling Outage are summarized in the November 29, 1990 report to the Nuclear Regulatory Commission, which are included in this Inservice Inspection Summary Report.



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

January 18, 199

Docket No. 50-206

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

Dear Mr. Ray:

SUBJECT: SAN ONOFRE UNIT 1 STEAM GENERATOR TUBE INSPECTION REPORT

We have reviewed the report "1990 Steam Generator Inspection Results, San Onofre Unit 1" which was submitted November 29, 1990 by the Southern California Edison Company. The report documents the steam generator tube inspections and repairs that were completed during refueling outage 11 to comply with Technical Specification Section 4.16. Additionally, the report documents results of a visual inspection of wrapper support bars on the secondary side of the steam generators.

Our review concludes that your inspections and repairs are consistent with Technical Specification requirements and industry practice. Accordingly, no further action is required.

Sincerely,

USPE

George Kalman, Senior Project Manager Project Directorate V Division of Reactor Projects III/IV/V Office of Nuclear Reactor Regulation

cc: See next page

#### Mr. Harold B. Ray Southern California Edison Company

cc: David R. Pigott, Esq. Orrick, Herrington & Sutcliffe 600 Montgomery Street San Francisco, California 94111

Mr. Robert G. Lacy Manager, Nuclear Department San Diego Gas & Electric Company P. O. Box 1831 San Diego, California 92112

Resident Inspector, San Onofre NPS c/o U.S. Nuclear Regulatory Commission P. O. Box 4329 San Clemente, California 92672

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

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

Regional Administrator, Region V UrS: Nuclear Regulatory Commission 1450 Maria Lane, Suite 210 Walnut Creek, California 94596

Mr. John Hickman Senior Health Physicist Environmental Radioactive Mgmt. Unit Environmental Management Branch State Department of Health Services 714 P Street, Room 616 Sacramento, California 95814

Mr. Don J. Womeldorf Chief, Environmental Management Branch California Department of Health Services 714 P Street, Room 616 Sacramento, California 95814

(10)

San Onofre Nuclear Generating Station, Unit No. 1

Mr. Richard J. Kosiba, Project Manager Bechtel Power Corporation 12440 E. Imperial Highway Norwalk, California 90650

Mr. Phil Johnson U.S. Nuclear Regulatory Commission Region V 1450 Maria Lane, Suite 210 Walnut Creek, California 94596

#### November 29, 1990

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

Subject: Docket No. 50-206 Steam Generator Inspections San Onofre Nuclear Generating Station, Unit 1

In accordance with the requirements of Technical Specification 4.16, "Inservice Inspection of Steam Generator Tubing," an inspection of the San Onofre Nuclear Generating Station, Unit 1 (SONGS 1) steam generators was performed as part of the Cycle 11 refueling outage activities. The results of the inspection and the corrective actions taken need to be provided to the NRC for review and approval prior to return to service as required by section 4.16.D.4 and your August 4, 1988 letter. Accordingly, enclosed is a report titled "1990 Steam Generator Inspection Results, San Onofre Unit 1." This report provides the information necessary to facilitate the NRC review of the inspection results and remedial actions.

The enclosed report also includes the results of our inspection of all the tubes in service which have defects below the uppermost one inch of tube roll expansion. This satisfies our reporting of these results seven days prior to return to service as required by Section 4.16.D.5. This report also satisfies our commitment to inspect the steam generator wrapper support bars as we clarified in our December 23, 1988 letter.

Our current schedule is to return the unit to service on February 28, 1991. If you require any additional information to support your review effort, please let me know.

Sincerely, R. W. Krieger STATION MANAGER

cc: J. B. Martin (Regional Administrator, NRC Region V) C. Caldwell (USNRC Senior Resident Inspector, SONGS 1, 2, and 3) J. E. Tatum (Project Manager, SONGS 1, USNRC, NRR) Institute of Nuclear Power Operations (INPO)

# II. TECHNICAL SPECIFICATION INSPECTION

#### A. <u>Introduction</u>

The San Onofre Unit 1 TS steam generator tubing inspection was performed during August 23, 1990, through September 7, 1990. The previous technical specification inspection was performed in March 1988. Southern California Edison's request to conduct the next steam generator tube inspection during the Thermal Shield Support Replacement and Cycle 11 Refueling Outage commencing June 30, 1990, rather than by March 7, 1990 was approved by U. S. Nuclear Regulatory Commission Order (Reference 3).

The March 1988 and earlier inspection results indicated that steam generators "A", "B", and "C" (SG-A, SG-B, and SG-C) are behaving in a like manner. Based on TS 4.16.A.3, which allows the inspection of steam generators on a rotating schedule if they are performing in a like manner, SG-A was selected for the inspection. The inspection plans, results, and conclusions are discussed below.

## . <u>Steam Generator Leak Test/Corrective Action</u>

#### 1. Description

San Onofre Unit 1 was experiencing a steam generator primary to secondary leak of approximately 15 gallons per day (gpd) when the plant shut down on June 30, 1990. This leakage had been detected during the Cycle 10 fuel cycle and slowly increased to 15 gpd before shutdown. This leakage was well below TS limits for the steam generators. Since this leakage had been detected during the fuel cycle, a leak test had been planned to identify and remove the leaking tubes from service.

2.

#### Results and Corrective Action

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The secondary side of all three steam generators was pressurized to approximately 650 pounds per square inch and the primary side of the tubesheet in each steam generator channel head was scanned for leaks using a pan and tilt camera. No leakage was observed in any cold leg channel head. A total of thirteen leaking tubes were identified in the hot leg channel heads. All leaking tubes are sleeved on the hot leg end. The breakdown of leaking tubes per steam generator is shown below:

Β.

Document Control Desk

# bcc:

Harold B. Ray, Senior Vice President, J. A. Beoletto, Rm. 330, GO1 102-A, IOC C. Chiu, D-4-E, SONGS L. O. Cash, D-18, SONGS J. L. Reeder, E-50, SONGS R. L. Erickson, (SDG&E), D-3-A, SONGS J. T. Reilly, X-480, IOC R. M. Rosenblum, 109-B, IOC P. Shaffer, D2F, SONGS D. A. Herbst, N-42, SONGS A. J. Schramm, A-72, SONGS M. P. Short, D-16, SONGS R. W. Waldo, D-15, SONGS M. A. Wharton, 135-J, IOC B. Katz, D-4-E, SONGS
R. W. Krieger, D-14, SONGS
H. E. Morgan, Vice President, D-45, SONGS Compliance File, D-2-F, SONGS F. R. Nandy, 109-A, IOC Nuclear Licensing Supervisors, CDM File NSG, N-46, SONGS 109-A, IOC R. D. Plappert, D-12, SONGS NTD Resource Center, E-50B RCTS File, D-2-F, SONGS M. P. Short Mp2, revenued 1/29, red to say whether A 40-36 & B34-33, B35-34 were plugged H. W. Newton **REVIEWERS:** D. Optiz R. D. Plappert P. Shaffer K. A. Slagle L. D. Brevig with revised sections V. and VIII J. Mundis  $\leftarrow *$ A. Matheny converts in 2009 sectors ब गा Concurrence indicated on supplemental bcc: \*\* Concurrence received via telephone firm R. canelas for R. Ormelas and F. Mandy I' Ifras

# 1990 STEAM GENERATOR INSPECTION RESULTS

SAN ONOFRE UNIT 1

DOCKET NO. 50-206

NOVEMBER 1990

# SOUTHERN CALIFORNIA EDISON COMPANY

ROSEMEAD, CALIFORNIA

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#### INTRODUCTION

Ι.

On June 30, 1990, San Onofre Unit 1 began the Thermal Shield Support Replacement and Cycle 11 Refueling Outage. As part of this outage, the steam generator tubing was inspected in accordance with the San Onofre Unit 1 Technical Specification (TS) 4.16, Inservice Inspection of Steam Generator Tubing. The purpose of this report is to provide detailed results of the steam generator inspections performed during the outage to facilitate the NRC review of these results and approval of the corrective action taken at San Onofre Unit 1 as it relates to the inspection of steam generators.

Consistent with the provisions of TS 4.16, an inspection was performed addressing requirements for random surveillance of the steam generator tubing and previously detected degradation. The last such inspection was conducted in March 1988. Further, in accordance with References 1 and 2, a secondary side inspection was conducted to visually inspect the intact wrapper support bars. The purpose of this inspection was to verify the bars had remained intact during operation and did not require removal.

Section II of this report contains the TS inspection program description, results, corrective actions, and conclusions. Section III of this report contains the cold leg top of the tubesheet indications introduction, results, and conclusions. Section IV contains the roll and roll transition primary side cracking introduction, results, and conclusions. Section V contains the secondary side circumferential indications introduction, results, and conclusions. Section VI contains the wrapper support bar inspection description, results, and conclusions. Section VII summarizes the overall conclusions derived from the inspection program. Finally, Section VIII provides a listing of the references used in this report.

SG	Tube Number <u>Row – Column</u>	Type of Sleeve (Upper_Joint)	Leak Rate (Drops/Minute)	
А	9 - 43	Braze	0.25	
B	37 - 52 36 - 52	Mechanical Mechanical	0.5 0.1	
C	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	Mechanical Mechanical Mechanical Mechanical Mechanical Mechanical Mechanical	5.0 1.7 1.1 0.9 0.2 0.2 0.1	
• .	34 - 51 34 - 64 35 - 42	Mechanical Mechanical Mechanical	<0.1 <0.1 <0.1	

All leaking tubes were inspected with eddy current over their full length, including the sleeved portion. There were no eddy current indications which correlated to the leakage. All leaking tubes were removed from service by mechanical plugging.

## 3. Conclusions

It is inferred that the observed leakage is associated with the sleeve joints based on the lack of correlatable eddy current indications.

The leakage for each leak limiting sleeve was within the design basis as discussed in Reference 4 (210 drops per minute).

Eddy Current Testing/Corrective Action

## **1.** Description

The conventional bobbin coil probe was used to provide the best possible assessment of the general condition of the inspected length of the non-sleeved portion of the steam generator tubes. The 8x1 probe and motorized rotating pancake coil (MRPC) probe were used to supplement the bobbin probe when necessary. The magnetically biased bobbin probe and the crosswound probe were employed to assess the condition of the sleeves inspected. The general eddy current testing program consisted of inspecting the non-sleeved length of 300 steam generator tubes in SG-A (at least 3% of the total number of tubes in service in all steam generators). In addition, the sleeved portion of 412 tubes (6.5% of the total number of sleeved tubes in service in all steam generators) was inspected. Unsleeved tubes for two pitches around the sleeving boundary and a random pattern in the remaining peripheral tubes were inspected from the hot-leg-tube end through the lowermost hot leg support. Inspection of these 474 unsleeved tubes (12.7% of the total number of unsleeved tubes in service in all steam generators) served the dual purposes of detection of indications of secondary side intergranular attack (IGA) at the top of the hot leg tubesheet and detection of primary side roll and roll transition cracking near the hot leg tube end. Also, previous eddy current indications in SG-A, greater than or equal to 20% through-wall, were inspected.

The inspection of the cold leg indicated there were tubes with imperfections in excess of the plugging limit at the top of the cold leg tubesheet in SG-A. As a result of identifying these imperfections it was necessary to inspect three percent of the tubes in one of the uninspected steam generators (SG-C was chosen) in accordance with TS 4.16.B.1. Also, since these imperfections were in excess of the plugging limit, this required inspection of an additional three percent of the tubes in SG-A and inspection of three percent of the tubes in SG-B and SG-C in accordance with Technical Specification 4.16.B.2. The increased inspection in SG-A included the tubes necessary to surround all defective tubes by two pitches. A total of 1794 of the tubes (53.4%) in SG-A were inspected at the top of the cold leg tubesheet, significantly exceeding all possible expansion criteria, including any that may have been required by that of TS 4.16.B.3 (6% of the tubes in SG-A). A total of 6 tubes with imperfections in excess of the plugging limit at the top of the cold leg tube sheet in SG-A were found. Based on eddy current testing results for SG-B and SG-C no tubes with imperfections were found in these steam generators at the top of the cold leg tube sheet.

Three imperfections were found in excess of the plugging limit between the top of the hot leg tubesheet and the lowermost support in SG-A. As a result of identifying these imperfections it was necessary to inspect three percent of the tubes in one of the uninspected steam generators (SG-C was chosen) in accordance with TS 4.16.B.1. Also, since these imperfections were in excess of the plugging limit, this required inspection of an additional three percent of the tubes in SG-Amandminspection of three percent of the tubes in SG-B and SG-C in accordance with TS 4.16.B.2. increased inspection in SG-A included the tubes necessary to surround all defective tubes by two pitches. Based on the eddy current testing results for SG-C no imperfections in excess of the plugging limit were found. The increased inspection in SG-B identified one imperfection in excess of the plugging limit prompting inspection of an additional 6% of the tubes in SG-B in accordance with TS 4.16.B.3. Three tubes were identified by this additional inspection as having imperfections in excess of the plugging limit. Two tubes were identified by this additional inspection as having secondary side circumferential indications at the top of the hot leg tubesheet, and were conservatively handled in the same manner as defective tubes would be. Additional inspection was performed to surround all defective tubes in SG-B by two pitches and gain data beyond that required by the TSs. A total of 998 tubes (76.8% of the unsleeved tubes in SG-B) were tested in the SG-B expansion sequence.

Tubesheet maps showing inspected tubes in SG-A, SG-B, and SG-C are provided in Appendix A.

2.

## **Results and Corrective Action**

As a result of the general technical specification and additional eddy current testing program, a total of 16 tubes were removed from service. This consists of 10 tubes in SG-A and 6 tubes in SG-B as listed in the following table. Appendix B provides an elevation view of the steam generator illustrating the axial location designations used in the listing.

SG

Α

Tube Number

Row - Column

30 - 32

33 - 38

33 - 41

27 - 52

4 - 18

34 - 42-

40 - 36

40 - 38

15 - 70

45 - 51

34 - 71

25 - 79

1

- 68

Flaw Size % Throughwal 67 57

roughwall	Location
67	TSC + 3.0
57	TSC + 3.0
53	TSC + 3.0
53	TSC + 7.9
51	TSC + 0.5
50	TSC + 2.2
94	TSH + 2.9
63	TSH + 6.6
50	TSH + 42.7
Note (1)	01H
DRI/IDI (2)	TEH + 2.0
DRI/IDI	TEH + 1.9
DRI/IDI	TEH + 2.2

TEH + 2.6

TSH + 0.2

TSH + 0.0

Avial

DRI/IDI 28 - 79 DTI/SCI (3) 34 - 33 DTI/SCI 35 - 34

Notes:

- Restricts passage of a 0.460" diameter probe (1)
- DRI/IDI Distorted roll indication per bobbin (2) probe, Inside diameter indication per MRPC probe.
- DTI/SCI Distorted tubesheet indication per (3) bobbin probe, Secondary side circumferential indication per MRPC probe.

Section III addresses cold leg top of tubesheet indications (six tubes removed from service) in detail. Section IV addresses primary side roll and roll transition cracking (four tubes removed from service) in detail. Section V addresses secondary side circumferential indications (three tubes removed from service) in detail. The following paragraphs address the three remaining tubes removed from service.

The defect in SG-A tube 40-38 is in the parent tubing above the sleeve. It is a typical hot leg "volumetric" (not crack-like) indication whose elevation above the hot leg tubesheet is not unusual. It is representative of other indications previously found in tubing at the same elevation. Surrounding tubes within two pitches of this tube were inspected and found to be free of defects.

The defect in SG-A tube 15-70 is in the parent tubing above the sleeve in a typically unflawed axial location. It is not associated with any support structure in the steam generator. It is 42.7 inches above the hot leg top of the tubesheet, 12.7 inches above the top of the sleeve and 2.5 inches below the lowermost hot leg support plate. Surrounding tubes within two pitches of this tube were inspected and found to be free of similar indications. No similar indications have been noted in any of the tubes inspected during this inspection or previous inspections.

Tube 1-68 in SG-A restricted passage of a 0.460 inch diameter probe at the lowermost hot leg support. This tube restricted passage of a 0.500 inch diameter probe in previous inspections. Considering the accuracy limitations of the gaging technique, the isolated nature of this indication, and other available data, this restricted tube does not alter the previous conclusion (Reference 1) that denting is not progressing.

3. Conclusions

The tubes selected for this inspection included random tubes and tubes in critical areas identified by Unit 1 and other similar plant experience. All tubes classified as defective, based on eddy current testing results, were removed from service by mechanical plugging. Other tubes were preventively removed from service by mechanical plugging consistent with eddy current testing results.

# D. <u>Summary/Conclusions</u>

A total of 3,949 tubes were inspected (39.5% of the tubes in service), and 29 tubes were removed from service by mechanical plugging. Tubesheet maps showing inspected tubes in SG-A, SG-B, and SG-C are provided in Appendix A. The 29 tubes which were plugged included:

13 leaking sleeves

6 defects at the top of the cold leg tubesheet

4 indications of primary side hot leg roll transition cracking

**3** secondary side top of the tubesheet circumferential indications

2 defects in parent tubing above hot leg sleeves

1 tube restricting passage of a 0.460 inch diameter eddy current probe

This inspection has demonstrated that limited progression of previously identified degradation mechanisms has occurred. These mechanisms include secondary side degradation at the cold leg top of tubesheet, primary side roll transition cracking, and secondary side circumferential indications at the hot leg top of tubesheet. There has been no detectable progression of denting, antivibration bar wear, or sleeve degradation.

This inspection has further demonstrated that this limited degradation progression can be monitored in subsequent routine inspections, and defective tubes removed from service in a timely manner. Accordingly, it is concluded that the remedial action taken (plugging) is appropriate to resolve steam generator tube degradation identified during this inspection and no further action is required.

# III. COLD LEG TOP OF THE TUBESHEET INDICATIONS

#### A. <u>Introduction</u>

Degradation on the secondary side of the tubing at the cold leg top of the tubesheet has been noted at San Onofre Unit 1 since 1978. Significant inspection in this region of the tube bundle started at this time in response to increasing industry awareness of the potential for degradation in regions other than the hot leg and U bend regions. The degradation is dispersed throughout the region of the tube bundle in which a sludge pile is expected. However, indication depths tend to be stable, and rarely exceed the plugging limit.

As reported in Reference 5, apparent growth of indications in this region in 1985 prompted comparison of a population of 296 indications, using data collected in 1980 as a baseline. The results of this comparison and subsequent evaluation in 1988 (Reference 1) indicated growth of indications in this region is very limited.

#### B. <u>Results</u>

A total of 2398 tubes (1794 in SG-A, 303 in SG-B, and 301 in SG-C) were inspected at the top of the cold leg tubesheet to monitor growth of indications in this region. Using the results of this inspection, 260 of the indications previously compared in 1985 (indications in those tubes remaining in service) were compared over a three fuel cycle interval from 1980 to 1990 with the following results:

SG	Number of Indications Compared	Average Growth Rate <u>(Percent Throughwall Per Cycle)</u>
A	171	-1.09
В	36	-0.68
C	53	-1.01

In addition to the foregoing comparison, previous data for the six defective tubes detected in this inspection was re-analyzed using state-of-the-art data analysis techniques to determine the maximum and mean growth rate per fuel cycle. Data from the Cycle 9 (1985) Refueling Outage was available for comparison with the present Cycle 11 (1990) Refueling Outage data. This provides an interval of two operational cycles. A comparison of the data from these two cycles is provided below. The maximum growth rate from this comparison is 7.5% per cycle for tube 34-42. The mean growth rate for all six indications is 3.8% per cycle.

#### Re-Analyzed

	Tube umber	Indication Axial <u>Location</u>	<b>U</b>	Cycle 11 Indication Depth <u>(% Throughwall)</u>		
3(	) - 32	TSC + 3.0	62 (Note	1) 67	2.5	
33	8 - 38-			57	6.5	
33	3 - 41	TSC + 3.0	50 (Note	2) 53	1.5	
27	7 - 52	TSC + 7.9	46	53	3.5	all bar and a second and a second and a second and a second and a second and a second and a second and a second I and a second and a second and a second and a second and a second and a second and a second and a second and a I and a second and a second and a second and a second and a second and a second and a second and a second and a
4	- 18	TSC + 0.5	48	51	1.5	
34	- 42	TSC + 2.2	35	50	7.5	

## Notes:

- This indication was recorded as 46% during the Cycle 9 outage; thus this tube was not classified as defective, and accordingly was not plugged. Re-analysis, consistent with Cycle 11 techniques, provides a result of 62%.
- (2) This indication was recorded as 43% during the Cycle 9 outage; thus this tube was not classified as defective, and accordingly was not plugged. Re-analysis, consistent with Cycle 11 techniques, provides a result of 50%. This difference in analysis results of 7 percent is within the expected eddy current measurement uncertainty (10%).

#### <u>Conclusions</u>

C.

The results of the comparison of 260 indications over three fuel cycles shows there is no significant growth for the cold leg top of the tubesheet indications when considered as a group.

Although the change in the indications for the six tubes with defects demonstrate that for some individual tubes limited degradation may be progressing, the mean growth rate of 3.8% per cycle for this group is well within that assumed in the safety analysis which defines the basis for the TS 4.16. Therefore, existing requirements to inspect previously identified problem regions during future inspections will ensure corrective actions are performed as necessary to prevent potential failures.

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# IV. PRIMARY SIDE ROLL AND ROLL TRANSITION CRACKING

#### A. <u>Introduction</u>

A 100% inspection of the hot leg unsleeved tubes in all three steam generators was done in February 1988 for primary side roll and roll transition cracking. The 147 tubes affected by this degradation mechanism were removed from service. Another 44 tubes with imperfections below the uppermost one inch of sound roll were left in service based on TS 4.16.D.1.e. The results for inspection of the cold leg end of the tubes indicated this problem was not present in the cold leg side.

Comparison of 1985 and 1988 eddy current data was done in 1988 to determine if primary side roll transition zone cracking was active. This comparison showed a slight change in the vertical distortion in only 3 out of the 13 tubes compared.

#### B. <u>Results</u>

A total of 1610 tubes (43% of the unsleeved tubes in service) were examined in the hot leg roll and roll transition region in the three steam generators using the bobbin probe. Hot leg primary side roll or roll transition cracking was not detected in any of the 474 tubes examined (40%) in SG-A, or any of the 188 tubes examined (15.4%) in SG-C. However, primary side roll transition zone cracking was detected and confirmed in four tubes of the 948 tubes examined (73%) in SG-B.

The 44 tubes with previous imperfections below the uppermost inch of sound roll continue to meet technical specification criteria for remaining in service. Appendix C contains examination results for these 44 tubes as required by TS 4.16.D.5.

As a by-product of examination for other purposes, 2398 tubes were examined (24% of the tubes in service) in the cold leg roll and roll transition region in the three steam generators. The results of the inspection of the cold leg tubes continues to confirm that this problem is not present in the cold leg side.

A review was conducted in 1990 of 1988 data for all four of the tubes in SG-B with primary side roll transition zone cracking. All of these indications were present to a limited degree in the 1988 data. A comparative review of the 1990 bobbin probe data for these indications, relative to indications at corresponding locations in tubes removed from service in 1988, provided an order of magnitude estimate of the extent of the cracking depth. This comparison indicated that the signal amplitudes for these four tubes is approximately 30% of the typical signal amplitude of thesesignals indicates that cracking in these tubes is in the early stages.

11

### C. Conclusions

The limited number of tubes affected by primary side roll and roll transition cracking, and the small amplitude of the bobbin coil eddy current signals for these tubes indicate that primary side roll and roll transition cracking is not progressing significantly.

Future inspections will provide timely detection of tubes affected by this degradation mechanism. This will support timely removal of defective tubes from service. Leak test results continue to demonstrate that no leakage has been experienced at San Onofre Unit 1 due to this degradation mechanism.

Further, continued growth monitoring of in service tubes with imperfections below the uppermost one inch of sound roll, per technical specifications, will provide for timely removal of appropriate tubes from service.

### SECONDARY SIDE CIRCUMFERENTIAL INDICATIONS

#### A. <u>Introduction</u>

۷.

San Onofre Unit 1 has a history of secondary side circumferential indications at the hot leg top of the tubesheet. In 1980-1981 approximately 65% of the tubes were sleeved on the hot leg end in response to secondary side circumferential intergranular attack (IGA) at the top of the hot leg tubesheet. Tubes in the unaffected outer periphery of the tube bundle were not sleeved.

In 1988 two unsleeved tubes adjacent to sleeved tubes were identified to have IGA-like indications at the top of the hot leg tubesheet based on MRPC data. Correlation of MRPC data with corresponding bobbin probe data for these two indications indicated that the degradation was less than 20 percent through wall. These two tubes were removed from service and a detailed report was provided to the NRC (Reference 6). It was concluded that IGA was not progressing.

#### B. <u>Results</u>

A total of 1610 tubes (43% of the unsleeved tubes in service) were inspected at the hot leg top of the tubesheet region. This includes 474 tubes (40%) in SG-A, 948 tubes (73%) in SG-B, and 188 tubes (15.4%) in SG-C. 87% of the unsleeved tubes adjacent to sleeved tubes were inspected.

#### 1. <u>SG-A Tube 40-36</u>

One tube (40-36) in SG-A had a 94% through wall outside diameter indication located 3-inches above the top of the hot leg tubesheet. It was detected and quantified using the bobbin coil probe. The MRPC data shows that the indication is circumferentially oriented, is less than 120 degrees (about 3/4-inch) in circumferential extent, and is about 1/4-inch in axial extent. The indication had some, but not all, of the characteristics of IGA, as previously found at San Onofre Unit 1. The indication was not present on the eddy current test data taken in 1988. Tube 40-36 is adjacent to sleeved tubes. As indicated above, 87% of the tubes adjacent to the sleeved tubes were inspected. Among these tubes it is the only tube with an indication at this or a similar axial location. Further, unsleeved tubes within two pitches of this tube were inspected using both bobbin and MRPC probes and were found free of defects.

Based on the results of the evaluation of tubes "pulled" for evaluation in 1980-1 the occurrence of IGA degradation at 3 inches above the top of the hot leg tubesheet in a tube adjacent to sleeved tubes would not be unexpected. However, experience at San Onofre Unit 1 indicates that the probability is very low for occurrence of IGA at locations other than at the top of the hot leg tubesheet. Accordingly, it is concluded that the probability of other tubes experiencing IGA, at locations above the top of the tubesheet, is also very low. Further, based on the results of tube pressure testing reported in Reference 7, it is concluded that in the as-found condition tube 40-36 in SG-A had adequate strength to successfully withstand design basis accident conditions.

#### 2. SG-B Tubes 34-33 and 35-34

Two tubes (34-33 and 35-34) in SG-B had secondary side circumferential indications detected by the bobbin probe at the top of the hot leg tubesheet. The characteristics of these indications are typical of IGA, as previously found at San Onofre Unit 1. These indications were not precisely quantified because of interfering factors at this location. However, the data indicates that their depth is less than the plugging limit of 50% through wall. MRPC data, subsequently collected, showed these indications to be circumferentially oriented, 180 degrees in extent. These tubes are also adjacent to sleeved tubes. Unsleeved tubes within two pitches of these tubes were inspected with both bobbin and MRPC probes and found free of similar indications.

All three affected tubes were in the special group of tubes specifically inspected for circumferential indications at the top of the hot leg tubesheet. This group includes all unsleeved tubes forming a boundary 2 tubes wide, completely surrounding the area of sleeved tubes. For each inspection, in the steam generator chosen for the technical specification inspection, this group is inspected with both the bobbin probe and a probe (8x1 or MRPC) to enhance response of circumferential indications.

The eddy current testing program was aggressively expanded in response to the three indications. Thus, the region of the tube bundles where the highest probability exists for this degradation was extensively inspected. In SG-A, unsleeved tubes within two tubes of sleeved tubes were inspected with both the bobbin probe and the 8x1 probe as part of the initial inservice inspection program. In SG-B, unsleeved tubes within two tubes of sleeved tubes were inspected with the bobbin probe. In SG-C, unsleeved tubes within one tube of sleeved tubes (with the exception of row 1 tubes) were inspected with the bobbin probe. Additionally, the three affected tubes, and surrounding unsleeved tubes within two tubes of the affected tubes were inspected with the MRPC probe.

The bobbin probe detection capabilities demonstrated in this inspection are consistent with capabilities discussed in Reference 6. Reference 8 reported that "based on correlation of 1980 ECT data with the pulled tube metallurgical results,"... (of 17 tubes)..." the bobbin coil can be used to detect IGA, as found at San Onofre Unit 1, at levels in excess of 20%". All three of the secondary side circumferential indications were detected by the bobbin probe. No additional indications were identified in the testing done with the 8x1 probe and MRPC probe.

#### C. <u>Conclusions</u>

The identification of three tubes with indications of potential intergranular attack (IGA) at or near the top of the hot leg tubesheet indicates that there may be very limited IGA progression at San Onofre Unit 1.

The depth of the indication in tube 40-36 in SG-A is of concern; however, no other similar flaws have been detected in any of the large number of tubes inspected. Further, even if other tubes were to become similarly affected, based on the limited circumferential extent of the observed indication, it is concluded that a tube rupture would be extremely unlikely. Therefore, the limited number of tubes affected out of the large number of tubes inspected and the location of these tubes adjacent to the previously sleeved tubes indicates that the progression of IGA is slow and that current inspection requirements and practices are adequate.

As previously discussed in Section II.C.2, the above three tubes were removed from service by mechanical plugging.

### VI. WRAPPER SUPPORT BAR INSPECTION

### A. <u>Introduction</u>

The original wrapper support design for the Westinghouse Series 27 steam generator, including San Onofre Unit 1, included six symmetrically located and vertically positioned bars welded to the base of the wrapper on the inside diameter and threaded into the tubesheet. The wrapper-rested on these bars and the bars were intended to accept the vertical wrapper loads specified in the steam generator equipment specification.

Subsequent modifications to Series 27 steam generators involved installing two brackets (Type I) in each steam generator, one end of the bracket welded to the transition section of the upper portion of the wrapper assembly with the other end attached to the feedwater ring bracket close to the steam generator shell. These brackets were designed to prevent vertical displacement of the wrapper assembly even if all of the existing wrappers support bars were not in place. In order to provide further support to the wrapper, these two support brackets were supplemented by a third bracket (Type II) welded to the wrapper and attached to the feedwater ring nozzle support.

During the secondary side visual inspections conducted in 1982, all but three of the wrapper support bars were found to be either broken or missing. The subsequent investigation required the loose support bars to be removed but allowed the three intact support bars to remain.

A commitment was made to visually inspect the intact wrapper support bars in SG-A and SG-B during the Cycle 11 Refueling Outage in References 1 and 2.

### <u>Results</u>

Β.

С.

A visual inspection of the intact wrapper support bars was conducted. The results of the inspection showed that the support bars are still intact and have not moved.

#### <u>Conclusions</u>

Based on the results of the wrapper support bar investigation documented in Reference 9 and the fact that the wrapper support bars in SG-A and SG-B remain intact, the wrapper support bars can be left in place without affecting tube integrity.

## VII. STEAM GENERATOR INSPECTION SUMMARY AND CONCLUSIONS

### A. <u>Summary of Results</u>

This inspection has demonstrated that only limited progression of previously identified degradation mechanisms has occurred. These mechanisms include secondary side degradation at the cold leg top of the tubesheet, primary side roll transition cracking, and secondary side circumferential degradation at the hot leg top of the tubesheet. Observed sleeve joint leakage during operation and during leak testing was within technical specification and design limits. A total of 3,949 tubes were inspected (39.5% of the tubes in service), and 29 tubes were removed from service by mechanical plugging.

This inspection has further demonstrated that sleeve joint leakage and the limited degradation progression can be monitored in subsequent inspections, and leaking or defective tubes removed from service in a timely manner.

The wrapper support bar visual inspection results demonstrate that the three remaining wrapper support bars in SG-A and SG-B are intact.

### <u>Conclusions</u>

Β.

The information provided in Sections II through VI of this report establishes the basis for concluding the remedial action taken to resolve sleeve joint leakage and steam generator tube degradation identified during this inspection is appropriate. Accordingly, no further action is required and power operation can be safely resumed.

In regards to the wrapper support bars, the information provided in Section VII of this report and Reference 9 provides adequate basis for leaving the intact bars in SG-A and SG-B. To ensure these support bars remain intact, an inspection will be conducted during the next steam generator inspection.

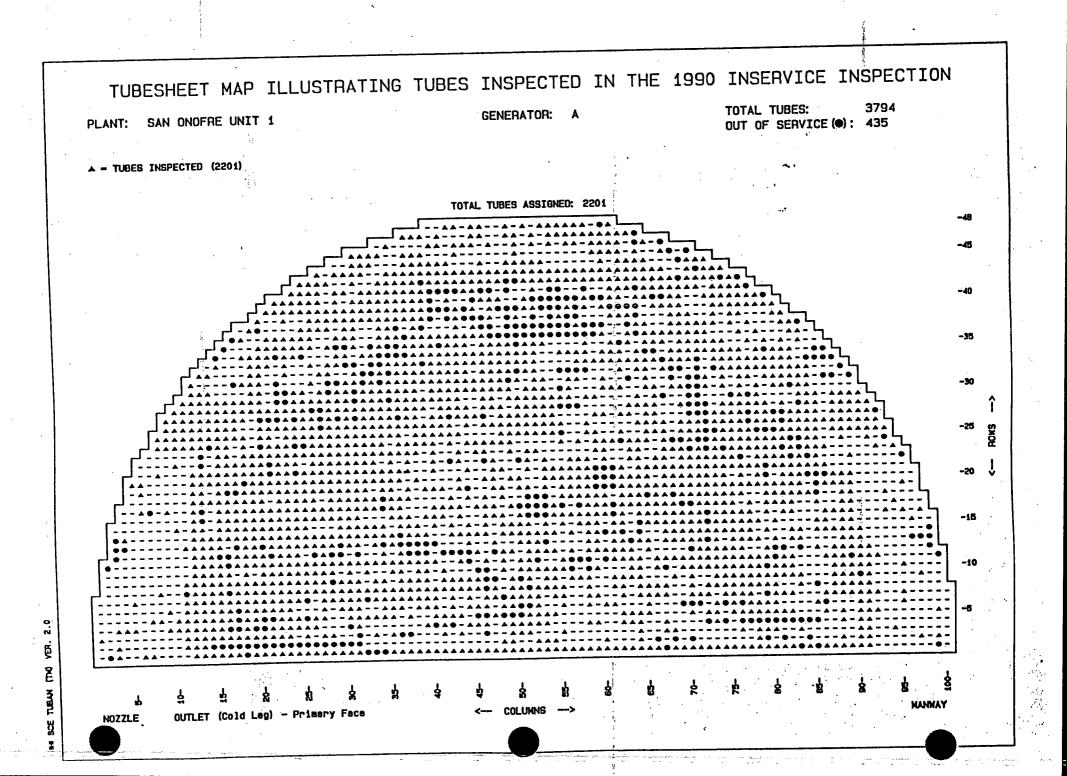
In summary, the information presented in this report provides adequate basis for the approval of the corrective action taken at San Onofre Unit 1 as it relates to TS inspection of steam generator tubing.

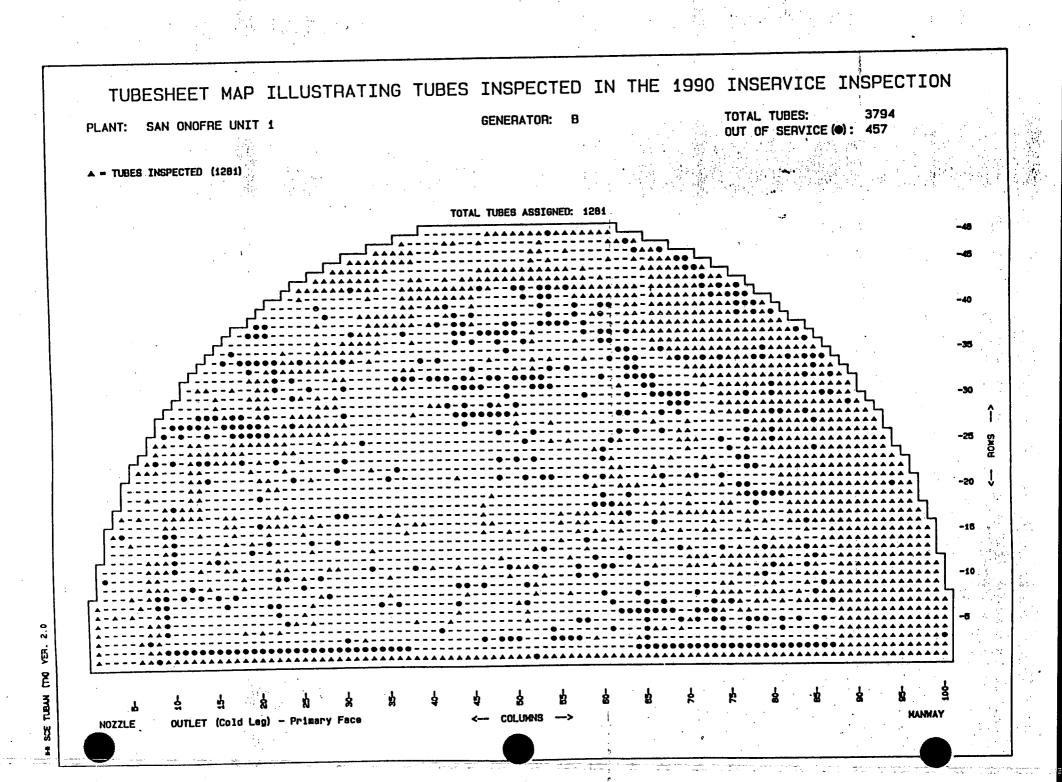
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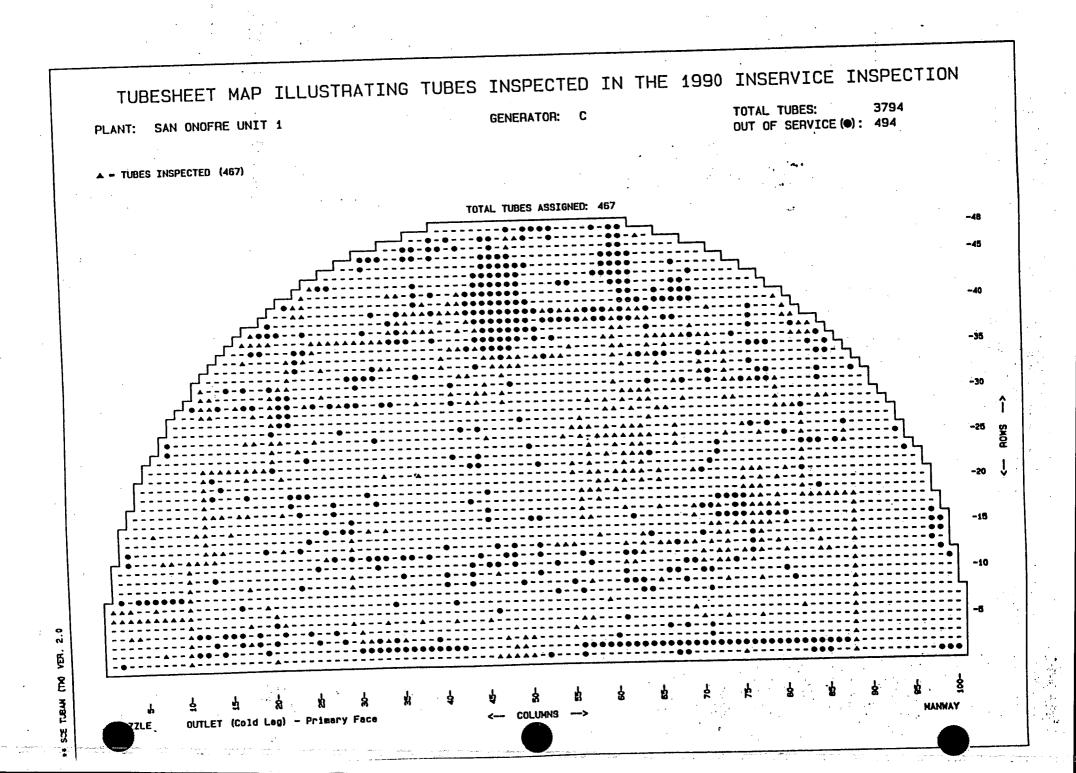
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  - "Technical Evaluation Report for Hybrid Sleeve," Westinghouse Electric Corporation Report No. NS-MFSE-81-054 dated March 1981 (Proprietary Version), Submitted by Letter K. P. Baskin (SCE) to D. M. Crutchfield (NRC), "Steam Generator Repair Program," dated March 5, 1981
- 5. Letter, M. O. Medford (SCE) to USNRC (NRC), "Steam Generator Inspection Report," dated April 14, 1986
- 6. Letter, M. O. Medford (SCE) to USNRC (NRC), "Steam Generator Inspection Report," dated May 23, 1988
- 7. Steam Generator Repair Program, Return to Power Report, San Onofre Unit 1, April 1981.
- 8. "1985 Re-Evaluation of Steam Generator Inspection Interval, San Onofre Nuclear Generating Station, Unit 1" dated March 1985, submitted by letter, M. O. Medford (SCE) to J. A. Zwolinski (NRC), March 19, 1985
- 9. Letter, K. P. Baskin (SCE) to D. M. Crutchfield (NRC), "Steam Generator Inspection Report," dated September 12, 1982

### APPENDIX A

# SG-A, SG-B, AND SG-C INSPECTION TUBESHEET MAPS

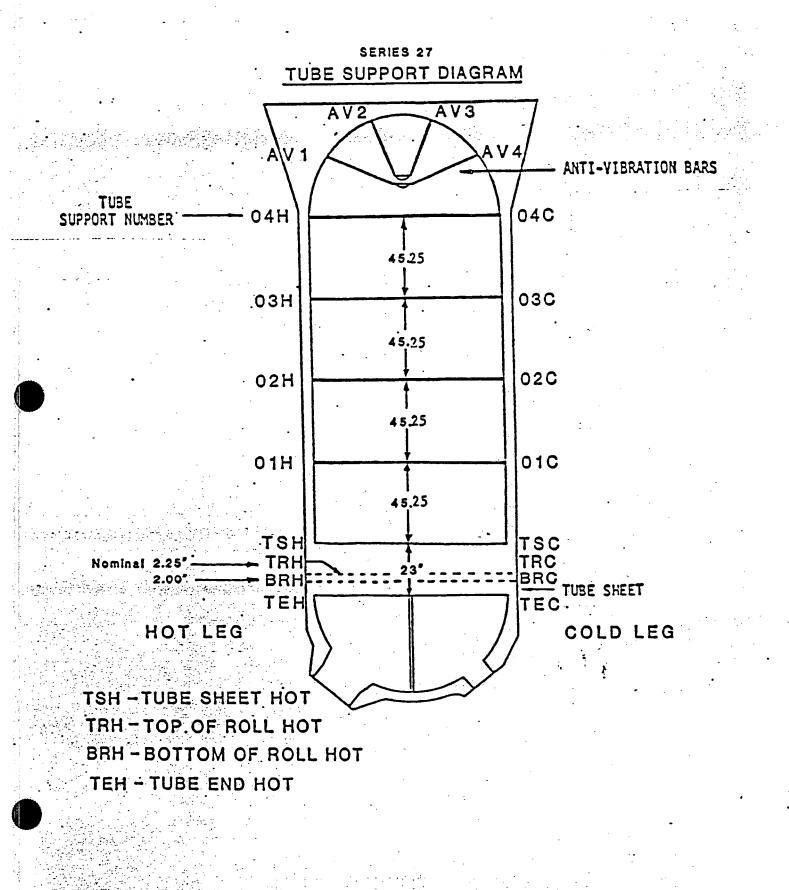






### APPENDIX B

# STEAM GENERATOR TUBE AXIAL LOCATION ILLUSTRATION



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### APPENDIX C

# INSPECTION RESULTS FOR TUBES WITH DEFECTS BELOW THE UPPERMOST INCH OF SOUND ROLL

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### INSPECTION RESULTS FOR TUBES WITH DEFECTS BELOW THE UPPERMOST INCH OF SOUND ROLL

### SAN ONOFRE UNIT 1 STEAM GENERATORS

The purpose of this Appendix C is to provide inspection results in accordance with Technical Specification 4.16.D.5, for tubes in service which have defects below the uppermost one inch of tube roll expansion. All these tubes were identified during the 1988 Inservice Inspection and re-inspected during the 1990 Inservice Inspection. There were no additional tubes with imperfections below the uppermost inch of sound roll identified in the 1990 Inservice Inspection.

A listing of tubes in service which have defects below the uppermost one inch of tube roll expansion follows. Testing with an F Star type bobbin probe verified that the locations and sizes of imperfections remain below the uppermost one inch of sound roll.

SG		Number - Colum	Tube Number <u>Row - Column</u>	Tube Number <u>Row - Column</u>
A	4	- 3	29 - 16	
В	35	- 31	36 - 83	
C	6 7 7 6 15 12 6 25 28 41 40 38 1 29	- 1 - 2 - 3 - 5 - 6 - 7 - 9 - 17 - 18 - 34 - 38 - 63 - 75 - 85	7 - 1 $4 - 3$ $4 - 4$ $6 - 6$ $2 - 7$ $6 - 8$ $30 - 13$ $34 - 17$ $37 - 18$ $41 - 35$ $47 - 48$ $47 - 63$ $36 - 81$ $24 - 87$	$\begin{array}{r} 6 & - & 2 \\ 6 & - & 3 \\ 6 & - & 4 \\ 7 & - & 6 \\ 6 & - & 7 \\ 12 & - & 8 \\ 29 & - & 16 \\ 25 & - & 18 \\ 1 & - & 20 \\ 39 & - & 37 \\ 47 & - & 49 \\ 39 & - & 71 \\ 29 & - & 84 \\ 25 & - & 87 \end{array}$

# SUMMARY OF RECORDED INDICATIONS

<u>and</u>

# RESOLUTION

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	SU		I	
ISI DRAWING	ITEM	METHOD	EVALUATION	DISPOSITION
ISI-1-29A	B-18	ΡT	5/32" Rounded Indication 3/32" Rounded Indication	Accept, Ref. 1
ISI-1-29A	B-1	PT	two 1/8" Rounded Indications	Accept, Ref. 1
	Core Barrel Exterior	Visual VT-3	Indications located on Irradiation Baskets at 28 degrees 44 min. and the thermal shield flexures.	Accept, Ref. 2
ISI-1-1100	4C	UT	Indication found outside of the examination boundary.	Accept, Ref. 3
		•		

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### **RECORDED INDICATION DISPOSITION**

### ACTION TAKEN

Reference 1: Rounded indications evaluated as acceptable per IAW SO1-XXVII-22.5 para 15.4.2 and acceptance criteria extracted from ASME III 74 ed. S75 Addenda NB 5352 as directed by SEC IWA 3100 of SEC XI 74 ed. S75 Addenda for acceptance criteria in the course of preparation.

Reference 2: Visual indications identified on the Irradiation Specimen Baskets as well as on the Core Barrel Support Blocks and Flexures had been previously identified and have been repaired via the Thermal Shield Core Barrel Repair Program and NCR # 90080190.

Reference 3:

Indication identified was outside of the examination boundary and found to be acceptable by an evaluation in accordance with ASME Section XI 74 ed. S75 Addenda, IWB-3510.

# CYCLE 11 OUTAGE

## PERSONNEL AND EQUIPMENT

# CERTFIFCATIONS AND QUALIFICATIONS

SCE Southern California Edison Company SAN ONOFRE NUCLEAR GENERATING STATION INSPECTION REPORT	Report No. 1N-CO'2
plier <u>ROCKWELL INTERNATIONAL</u>	Page <u>1</u> of <u>2</u> Purchase Order No. <u>8M030004\</u>
Unit No. 11 Quality Class_SR	
Component Descrip. PERSONNEL CERTIFICATION REVIEW	Work Order No. NA
	Section XI Traveler NoNA
Equip Tag/Serial #_ <u>NA</u>	Procedure No. TQAM 7D, PARA. 3.3
Location_SONGS	Reference Drawing No. NA
Contact/Dept <u>ROBERT DELONG</u>	NCR NA CAR NA DCP NA

REPORT SUMMARY

This Inspection Report is written to document the review of subcontractor, ROCKWELL INTERNATIONAL, for personnel certification.

Personnel conducting examinations and duties required by ASME Section III or XI must be qualified in accordance with a procedure prepared in accordance with ASNT-TC-1A. For Nondestructive Examinations not covered by the ASNT-TC-1A document, personnel shall be qualified by the agent to comparable levels of competency by subjection to comparable examinations on the particular method involved.

The review of Level I,II and III personnel have been evaluated To Rockwell International procedure "QUALIFICATION AND CERTIFICATION OF NDE PERSONNEL," "QAOP N6.02," dated 4-6-84, 4-25-89 and 3-30-90. The following personnel certifications have been evaluated to these procedures and determined to be acceptable to perform examinations in the discipline levels as shown.

NAME	METHOD	LEVEL	CERT. EXPIRATION	EYE TEST
Cutting, R.	UT ISI	IIA	8-90	6-21-90
Smith, N.	UT ISI	IIA	2-92	3-21-90
Waite, P	UT ISI	IIA	3-91	1-10-90
Harris, J.	UT ISI	IIA	3-91	3-20-90
Meister, C	UT	II	6-93	1-11-90

Distribution: D. C. Stonecipher R. P. Delong B. A. Hammer D. D. Cole Technical Services QA CDM SONGS

Inspected By Duce Stamp No. Approved By

"....SEEKING CLARIFICATION, ATTENTION TO DETAIL..."SURVEILLANCE" ... "WITH" Mr. Howard P. Allen's Letter, March 26, 1985.

INSPECTION REPORT	(continuation)		P	age_2of_2
Component Descrip PERSONNEL CER	TIFICATION REVIEW		R	eport No. <u>1N-002-9</u> D
NAME	METHOD	LEVEL	CERT. EXPIRATION	N EYE TEST
Shaw, G.	UT ISI	I	12-91	6-4-90
Francisco, N. 89	UT ISI	I	12-91	11-28-
The following Leve they met the quali				
NAME	METHOD	LEVEL	CERT. EXPIRATION	i eye test
Donnelly, C.	RT UT	III III		
	PT	III		
Marshall, R.	UT	III J	SI 2-94	6-4-90
	VT 1 &	3 III 1	SI 1-94	-
Knox, C.	UT	III 1	SI 4-91	12-21-89
	VT 1 &	3 III 1	SI 2-95	
Johnson, W. /	UT	III I	SI 4-91	11-12-89
		3 III 1		
Hardy, R.	UT	III I	SI 4-91	1-11-90
	VT 1 &	3 III I	SI 2-95	
Richards, C.	UT	III I	SI 6-92	2-9-90
	VT 1 &			

Inspector's Stamp No.\_\_\_\_

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SCE Southern California Edison Company SAN ONOFRE NUCLEAR GENERATING STATION INSPECTION REPORT	Report No. <u>IN-001-96</u> Page <u>1</u> of <u>2</u>
SupplierEBASCO_SERVICES_INCORPORATED	Purchase Order No. <u>84030004</u>
t NoQuality Class_SR	Inspection Date_7-10-90Time_NA
Component Descrip. PERSONNEL CERTIFICATION REVIEW	Work Order No. NA
	Section XI Traveler No. NA
Equip Tag/Serial #_NA	Procedure No. TOAM 7D, PARA. 3.3
Location_SONGS	Reference Drawing No. NA
Contact/DeptROBERT_DELONG	NCR <u>NA</u> CAR <u>NA</u> DCP <u>NA</u>

#### REPORT SUMMARY

This Inspection Report is written to document the review of subcontractor, EBASCO SERVICES INCORPORATED, for personnel certification.

Personnel conducting examinations and duties required by ASME Section III or XI must be qualified in accordance with a procedure prepared in accordance with ASNT-TC-1A. For Nondestructive Examinations not covered by the ASNT-TC-1A document, personnel shall be qualified by the agent to comparable levels of competency by subjection to comparable examinations on the particular method involved.

The review of Level I,II and III personnel have been evaluated to EBASCO SERVICES INCORPORATED procedure "Training, Examination and Certification of Nondestructive Examination Personnel" "NDE-1," dated 6-1-90. The following personnel certifications have been evaluated to this procedure and determined to be acceptable to perform examinations in the discipline levels as shown.

NAME Orihuela Jr. M.	METHOD MT UT	LEVEL CERT. II II	EXPIRATION 2-90 8-92	EYE TEST 8-21-89
Vano, R.	UT MT PT	I I Trainee I	8-92 11-92 9-92	9-11-89
Brannin, M.	UT PT	I Trainee I Trainee	8-92 9-92	9-8-89

Distribution: D. C. Stonecipher P. P. Delong B. A. Hammer D. D. Cole Technical Services QA CDN SONGS

Approved

"...SEEKING CLARIFICATION, ATTENTION TO DETAIL..."SURVEILLANCE"..."WITH"..."FORTHRIGHTNESS...," Mr. Howard P. Allen's Letter, March 26, 1985.

. INSPECTION	REPORT	(continuation)

Component Descrip\_EBASCO\_PERSONNEL\_CERTIFICATION\_REVIEW\_\_\_\_

Page\_2\_\_\_of\_2\_

Report No. 1N-081-90

NAME Garcia, A	METHOD RT UT MT PT	LEVEL CERT. I I Trainee I Trainee I Trainee I Trainee	EXPIRATION 10-92 1-92 1-93 1-92	EYE TEST 1-23-90
Spindler, S.	UT PT	II II	10-92 10-92	1-23-90
Spelde, T.	UT MT PT ET	I I II I Trainee	8-91 8-91 12-92 8-91	7-19-89

The following Level III certifications were reviewed to verify that they met the qualification requirement of the respective procedure.

NAME Paillaman, R	METHOD • UT / VT 1	III	CERT. EXPIRATION 6-92 6-92	EYE TEST 8-10-89
Bullen, H.	RT UT MT PT VT 1	III III III III III III	6-92 3-93 6-92 6-92 3-93	11-28-89
Bagley, J.	VT 1	-4 III	11-91	1-12-90



# <u>ISI</u>

## EXAMINATION PROCEDURES

# UNIT 1 CYCLE 11

### Unit #1 Cycle 11 Period #3 Outage #2

### EXAMINATION PROCEDURES

The following qualified examination procedures were used for inservice and preservice examinations conducted during the Cycle 11 Refueling Outage.

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(a) A start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of the start of

NUMBER		TITLE
1. WESTINGHOUSE	<u>.</u>	
SO1-W-ISI-8	Rev. O	Visual Examination
SO1-W-ISI-70	Rev. O	Magnetic Particle Examination
SO1-W-ISI-3.10	Rev. O	Preservice and Inservice Examination Manual Ultrasonic Equipment Qualification
SO1-W-ISI-11	Rev. O	Liquid Penetrant Examination
SO1-W-ISI-15	Rev. O	Ultrasonic Examination of Studs, Bolts and Nuts
2. ROCKWELL/ROC	KETDYNE:	
SO1-XXVII-20.6	Rev. O	Inservice Inspection-Ultrasonic Examination of Reactor Vessel Integral Supports
SO1-XXVII-20.7	Rev. O	Inservice Inspection-Ultrasonic Examination of Reactor Vessel Flange Ligament Areas
SO1-XXVII-20.8	Rev. O	Inservice Inspection-Ultrasonic Examination of Reactor Nozzle Inside Radius Section
SO1-XXVII-20.9	Rev. O	Inservice Inspection-Ultrasonic Examination of Reactor Vessel Circumferential and Longitudinal Shell Welds
SO1-XXVII-20.10	Rev. O	Inservice Inspection-Ultrasonic Examination of the Reactor Flange to Vessel Weld from the Flange Surface

NUMBER		TITLE
SO1-XXVII-20.11	Rev. O	Inservice Inspection-Ultrasonic Examination for Detection of Underclad Cracking and Examination for Near-Surface Reflectors from the Inside Surface
SO1-XXVII-20.12	Rev. O	Inservice Inspection-Ultrasoinc Examination of Nuclear Reactor of Nozzle to Vessel Welds
SO1-XXVII-20.13	Rev. O	Inservice Inspection-Ultrasoinc Examination of Nuclear Reactor Safe End- to-Nozzle Welds
SO1-XXVII-20.14	Rev. O	Qualification and Certification of NDE Personnel
3. EBASCO:		
SO1-XXVII-22.1	Rev. O	Magnetic Particle Examination of Welds and Bolting
SO1-XXVII-22.2	Rev. O	Procedure for Inspection System Performance Checks
SO1-XXVII-22.3	Rev. O	Performance of RF Waveforms for Krautkramer USK Series UT Scopes
SO1-XXVII-22.4	Rev. O	Remote Visual Examination of the Reactor Vessel Internals
SO1-XXVII-22.5	Rev. O	Liquid Penetrant Examination (solvent removable methods)
SO1-XXVII-22.6	Rev. 0	UT Manual Examination of Class 1 Reactor Vessel Welds Covered by Reg. Guide 1.150
SO1-XXVII-22.7	Rev. O	Ultrasonic Examination of Class 1 & 2 Piping Welds Joining Similar & Dissimilar Materials
SO1-XXVII-22.8	Rev. O	Visual Examination
SO1-XXVII-22.9	Rev. O	Training Examination & Certification of Nondestructive Examination Personnel
SO1-XXVII-22.10	Rev. O	Ultrasonic Examination of RPV Closure Head Studs
SO1-XXVII-22.11	Rev. O	Review, Approval and Control of Procedures and Instructions

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# ABSTRACT OF ASME XI REPAIRS AND REPLACEMENTS UNIT 1 CYCLE 11 REFUELING OUTAGE

CODE		MAINTENANCE		NIS-2		
CLASS	EQUIPMENT ID	ORDER	TRAVELER	SIGNED	DESCRIPTION/PSE	_
						-
	· .				·	
		040000/0000		04/04/91·	REPLACED SNUBBER	PSE=VT-3,4
1	S1015000H00A	91020840000		04/04/91	REPLACED SNUBBER	PSE=VT-3,4
1	S1015000H00C	90102669002		04/04/91	REPLACED SNUBBER W/90102669	PSE=VT-3,4
1	S1015000H0FA	90102670001		02/21/91	REPLACED SNUBBER	PSE=VT-3,4
1	S1015011H00NA	90082523000 90080611000		05/30/91	REPLACED SNUBBER	PSE=VT-3,4
1	S1050318H013	89111626000	•	03/21/91	REPLACED VALVE INTERNALS	PSE=VT-2
1	S1LDSCV203 S1LDSCV526	90121256000		04/02/91	REPLACED VALVE DISC	PSE=VT-2
1	S1LDSLCV1112	90121238000		06/08/91	REPLACED VALVE INTERNALS & FASTENERS	PSE=VT-2
1	S1LDSLCV1112	91010916001		06/08/91	REPAIRED VALVE STEM. W/90111198	PSE=VT-2
1	S1MSSE1A	90081628004		06/12/91	REPLACED MW FASTENERS. W/90101833	PSE=VT-1,2
1	S1MSSE1A	90101833000		06/12/91	REPLACED MW FASTENERS W/90081628	PSE=VT-2
1	S1MSSE1B	90081629000		06/17/91	REPLACED MW FASTENERS. W/90101834	PSE=VT-1,2
1	S1MSSE1B	90101834000		06/15/91	REPLACED FASTENERS W/90081629	PSE=VT-1
1	S1MSSE1C	90081602000		06/07/91	REPLACED MW FASTENERS W/90101833	PSE=VT-1,2
1	S1MSSE1C	90101835000		06/07/91	REPLACED MW FASTENERS W/90081602	PSE=VT-1,2
1	S1PZRC2	90061212001		04/04/91	REPLACED CAP SCREWS	PSE=VT-1,2
1	S1PZRCV545	89111979002	·	04/29/91	REPAIRED GASKET SEATING SURFACE	PSE=VT-2
1	S1PZRPCV430H	89110419001		12/13/90	REPAIRED BONNET NIPPLE	PSE=VT-2
1	S1PZRRV532	89052422000		07/05/89	REPLACED RELIEF VALVE	PSE=VT-2
1	S1PZRRV532	89100177000		04/20/91	REPLACED RELIEF VALVE	PSE=VT-2 PSE=N0
1	S1PZRRV532	89122251000			REPLACED NOZZLE/DISC REPLACED NOZZLE/DISC	PSE=NO
1	S1PZRRV532	90081434000	SO1-90-028	04/28/91	REPLACED AUZZLE/DISC REPLACED 6" RELIEF VALVE	PSE=VT-2
1 1	S1PZRRV533	89052421000		07/07/89	REPLACED FASTENERS W/89052421	PSE=VT-2
1	S1PZRRV533 S1PZRRV533	89053288000		04/04/91	REPLACED RELIEF VALVE	PSE=VT-2
. i	S1PZRRV555	89100178000 90081435000	so1-90-027	06/08/91	REPLACED NOZZLE/DISC	PSE=N0
i	S1PZZRRV533	89122256000	S01-90-019	05/28/91	REPLACED NOZZLE/DISC	PSE=NO
<b>D</b> i 👘	S1RCP2020-2"-BH2	90071543000	301 90 019	01/27/91	REPAIRED WELD JOINT	PSE=PT,VT-2
1	S1RCP2020-2"-BH2	90092221000	•	01/02/91	REPAIR-REMOVED INDENTATIONS FROM PIPE	PSE=NO
1	S1RCP303	90101857000		04/02/91	REPLACED .75" GLOBE VALVE	PSE=VT-2
1	S1RCPFCV1115A	90022755000		04/02/91	REPLACED VALVE INTERNALS	PSE=VT-2
1	S1RCPFCV1115B	89070368000	•	04/04/91	REPLACED VALVE INTERNALS	PSE=VT-2
1	S1RCSC1	89060538001	•	08/01/89	REPLACED CON'SEAL BOLTING W/89061146	PSE=VT-2
1	S1RCSC1	89061146001		0 <b>8/01/89</b>	REPLACED CON'SEAL BOLTING W/89060538	PSE=VT-2
1	S1RCSG2C	90012343000		05/09/91	REPLACED FASTENERS	PSE=VT-1,2
1	S1RCSTE410C	90110138000		04/03/91	REPLACED THM PLUG	PSE=VT-2
1	S1RHRMOV813	88090530000		04/30/91	REPLACED PACKING GLAND LEAK-OFF PLUG	PSE=VT-2
1	S1RHRMOV814	88090531000		04/30/91	REPLACED PACKING GLAND LEAK-OFF PLUG	PSE=VT-2
1	S1RHRMOV833 S1SIS340	88090527000 90111481000		04/30/91 04/04/91	REPLACED PACKING GLAND LEAK-OFF PLUG Replaced Pipe Cap	PSE=VT-2 PSE=VT-2
1 .	SIPZRRV532	90080760001		04/04/91	REPARED VALVE	PSE=NO
ż	S1012055H00A	90102861001		03/12/91	REPLACED LOAD PIN	PSE=VT-3
2	S1013073H315	90091551000		01/27/91	REPAIRED SUPPORT	PSE=NO
2	S1013073H325	90091553000		02/05/91	REPAIRED SUPPORT	PSE=NO
2	S1050318H014	90101782000		02/14/91	REPLACED SNUBBER	PSE=VT-3,4
2	S1056002H008	90082392000		03/14/91	REPLACED SNUBBER	PSE=VT-3,4
2	S1056002H024	90082393000		02/15/91	REPLACED SNUBBER	PSE=VT-3,4
2	S1056004H012	90101817000		03/20/91	REPLACED LOAD STUD	PSE=VT-3,4
2 2	S1060015H011	90101818000		03/16/91	REPLACED LOAD STUD	PSE=VT-3,4
2	S1060317H016	90101807000	•	02/15/91		PSE=VT-3,4
2	S1060317H017 S1066003H007	90101809001 91010509000		02/15/91	REPLACED SNUBBER	PSE=VT-3,4
2	S1066003H008	90102663000		04/04/91	REPLACED BEARING ASSEMBLY	PSE=VT-3,4
2	S12002-2"-BH3	90010525000	SO1-90-001	02/14/91 11/16/90	REPLACED LOAD PIN REPLACED FLOW TRANSMITTER	PSE=VT-1,3
2	STAFWCV113	90013010002	301 90 001	04/24/91	REPLACED FLOW TRANSMITTER	PSE=VT-2
2	S1AFWSV2619	89090852000		04/02/91	REPLACED SOLENOID VALVE	PSE=VT-2
2	S1BASG948	89011456000		04/04/91	REPLACED SOLENOID VALVE	PSE=VT-2 PSE=VT-2
2	S1CRS337	90081729000		03/20/91	REPLACED VALVE	PSE=VT-2
2	S1CRS338	89060748002		03/20/91	REPAIRED LEAK-OFF PLUG	PSE=VT-2
2	S1CRS374	87040504001	•	03/02/90	REPLACED GLOBE VALVE	PSE=VT-2
2	SICRSCONTSPRAY	90091282001		04/02/91	REPAIRED 6" PIPING	PSE=MT
2	S1CRSCV517	91020205000	SO1-91-010	03/19/91	INSTALLED FLOW DIRECTION INDICATOR	PSE=NO
2	S1CRSCV518	91020207000	S01-91-011	03/19/91	INSTALLED FLOW DIRECTION INDICATOR	PSE=NO
2	S1CRSD1	89020162000		07/24/90	REPLACED MANWAY FASTENERS	PSE=VT-2
Z	S1CRSG60	90021085001		04/23/90		PSE=VT-2
2	S1CRSR0525	90122174000	S01-91-004	02/08/91	REPLACED FLOW ORIFICE	PSE=VT-2
2	S1CRSR0526	90122173000	\$01-91-003	02/08/91	REPLACED FLOW ORIFICE	PSE=VT-2

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# ABSTRACT OF ASME XI REPAIRS AND REPLACEMENTS UNIT 1 CYCLE 11 REFUELING OUTAGE

CODE		MAINTENANCE	SECTIONXI	NIS-2		
CLASS	EQUIPMENT ID	ORDER	TRAVELER	SIGNED	DESCRIPTION/PSE	
		**********				
	-					
2	S1CRSRV882	90010412002		04/04/91	REPLACED VALVE DISC	PSE=VT-2 PSE=NO
2	S1CRSSV2517	90081311	so1-90-032	01/02/91	REPLACED ACTUATOR MOUNTING PLATE REPLACED ACTUATOR MOUNTING PLATE	PSE=NO
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	S1CRSSV2518	90081312	so1-90-033	01/02/91	REPLACED VALVE PARTS	PSE=VT-2
2	S1CRSXJ976	89120055000		11/07/90 04/07/91	REPLACED PANCAKE FLANGE	PSE=NO
2	S1CVSCV40	91030337003 90101760000		04/04/91	REPLACED BOLTING	PSE=VT-1
2	S1FHSXFERTUBE S1FWS339	88022081001		04/10/91	REPLACED BOLTING REPLACED GLOBE VALVE REPAIRED BLOWDOWN LN. REPLACED 10" VALVE DISC	PSE=VT-2
2	S1FWS341,342,343	91011984000		06/08/91	REPAIRED BLOWDOWN LN.	PSE=NO
2	S1FWS345	89071853001		04/28/91	REPLACED 10" VALVE DISC	PSE=VT-2 PSE=VT-2
2	S1FWS346	89071854002		04/27/91	REPLACED 10" VALVE DISC	PSE=VT-2
2	\$1FW\$371	88090099001		06/07/91	REPLACED 10" VALVE DISC REPLACED 2" CHECK VALVE DISC REPLACED GLOBE VALVE	PSE=VT-2
2	S1FWS373	88090096001		03/12/91 05/09/91	REPAIRED VALVE DISC	PSE=VT-2
2	S1FWS376 S1FWS386	90060430004 88090100001		06/07/91	REPLACED CHECK VALVE DISC	PSE=VT-2
2	S1FWS388	88090097001		03/12/91	REPLACED GLOBE VALVE	PSE=VT-2
2	S1FWS398	89071855003		04/24/91	REPLACED 10" VALVE DISC	PSE=VT-2
2	S1FWS410	88090101001		06/07/91	REPLACED CHECK VALVE DISC	PSE=VT-2 PSE=VT-2
2.	\$1FW\$412	88090098001		03/12/91	KEPERCED E GEODE HIGH	PSE=VT-2
2	S1FWS438	89071851002		04/24/91 04/30/91	REPLACED 10" VALVE DISC	PSE=VT-2
2	S1FWS439	89071852001 91011057001		02/15/91	REPAIRED 2" PIPE	PSE=NO
2	S1FWSBLOWDOWN S1FWSCV875A	90112220000	so1-90-037	02/22/91	REPLACEMENT-ADDED VALVE BY-PASS	PSE=VT-2
2	S1FWSCV875A	90112220000	so1-90-038	02/22/91	REPLACEMENT-ADDED VALVE BY-PASS	PSE=VT-2
2	S1FWSCV8758	89061998002		05/30/91	REPAIRED BONNET FLANGE	PSE=VT-2
2	S1FWSFCV456	89112543005		05/22/91	REPLACED DISC & FASTENERS	PSE=VT-2
2	S1FWSFCV456	90102864000		02/25/91	REPAIRED GAGE Replaced fasteners	PSE=NO PSE=VT-2
2	S1FWSFCV457	90012626003		04/24/91 06/08/91	DEDIACED FLANCE & ROLTING	PSE=VT-2
2	S1FWSG3A S1FWSG3A	90031945004 90031985000		11/23/90	REMOVED NUT FROM PIPE FLANGE	PSE=NO
2	S1FWSR0897, 898	91010430000	so1-91-002	02/09/91	REPLACED FLANGE STUDS	PSE=NO
2	S1FWSR0897A, 898A		S01-91-001	02/09/91	REPLACED FLANGE STUDS	PSE=NO
2	S1LDS2071	90060626	so1-90-010	09/25/90	REPLACEMENT-INSTALLED CHECK VALVE	PSE=VT-2
2	S1LDSCV526	91020496000	so1-91-013	03/19/91	INSTALLED FLOW DIRECTION INDICATOR	PSE=NO
2	S1MSS020	89111412002		06/07/91 04/02/91	REPLACED .75" GLOBE VALVE REPLACED VALVE INTERNALS	PSE=VT-2 PSE=VT-2
2	S1MSSCV76 S1MSSCV78	90012997000 90020186001		04/02/91	REPLACED VALVE INTERNALS	PSE=VT-2
2	S1MSSD943	90011352000		04/05/90	DEDATOEN DILLC	PSE=NO
2	S1MSSD943	90011442000		04/05/90	REPLACED PLUG W/90011352 REPAIRED VALVE DISC REPAIRED VALVE BODY REPAIRED WELD JOINT REPLACED GLOBE VALVE REPAIRED 2" GLOBE VALVE	PSE=VT-2
2	S1MSSPV1650	90091339000		05/09/91	REPAIRED VALVE DISC	PSE=VT-2
2	S1MSSPV1650	90091545000		05/09/91	REPAIRED VALVE BODY	PSE=VT-2
2	S1RCP2055-3/4"-BH2	90071545000		04/27/91	REPAIRED WELD JOINT	PSE=VT-2
2	S1RCP305 S1RCP315	90101858000 90120446000		04/02/91 03/12/91	REPLACED GLOBE VALVE	PSE=VT-2 PSE=NO
2	S1RCPCV527	91020497000	so1-91-014		INSTALLED FLOW DIRECTION INDICATOR	PSE=NO
2	S1RCPFCV1115C	90022761000		04/04/91	REPLACED VALVE INTERNALS	PSE=VT-2
2	S1RCPPSE1117A	91020903001		03/21/91	REPLACED 1" RUPTURED DISC	PSE=VT-2
2	S1RCPPSE1117B	91012230000	SO1-91-019	03/29/91	REPLACED RUPTURE DISC	PSE=VT-2
2	S1RCPPSE1117C	91012241000	SO1-91-018	03/29/91	REPLACED RUPTURE DISC	PSE=VT-2
2 2	S1RHR029 S1RHRE21B	90103081001 89070307001	e gara	04/04/91 02/05/90	REPLACED DISC ASSMBLY Replaced flange bolting	PSE=VT-2 PSE=VT-2
2	S1RHRMOV822A	88090529000		04/30/91		PSE=VT-2
2	S1RHRMOV8228	88100558000	· ·	04/30/91	REPLACED PACKING GLAND LEAK-OFF PLUG	PSE=VT-2
· 2	S1RSSCV953	90081960001		04/24/91	REPLACED VALVE INTERNALS	PSE=VT-2
2	S1RSSCV955	89051750001	· · ·	07/05/89	REPLACED FASTENERS & TUBE	PSE=VT-2
2	S1RSSCV955	89101012001		03/21/91	REPLACED VALVE INTERNALS	PSE=VT-2
2	S1RSSCV956	90121076	S01-90-039	02/09/91	REPLACED TUBING	PSE=VT-2
2	S1RSSCV956 S1SCF358	90121592 90050986000	so1-90-036	02/09/91 04/02/91	REPLACEMENT-RELOCATED CONTROL VALVE REPLACED .5" CHECK VALVE	
2	\$15CF359	90052123000		04/02/91		PSE=VT-2 PSE=VT-2
2	S1SCF398	90050985000		04/02/91	REPLACED CHECK VALVE REPLACED .5" CHECK VALVE	PSE=VI-2
2	S1SCF413	91030495000	•	04/04/91	REPLACED VALVE	PSE=VT-2
2	S1SHARV2003B	90010416002	8 J. 1	06/12/91	REPLACED .75" RELIEF VALVE	PSE=VT-2
2	S1SIS003	89122214001		04/28/91	REPAIRED CHECK VALVE	PSE=VT-2 PSE=VT-2
2	S1SIS302 S1SIS312	89071268000 89070594000		05/30/90	REPLACED 1ª BOLTING	
2	C1010313	80062007001	1988年1日	08/09/89 08/14/89	REPLACED 1" BOLTING REPLACED .5" PIPE REPLACED NIPPLE	PSE=NO
2	S1SIS366	89060285000		06/23/80	REPAIRED .75" VALVE TO DIDE LEIN	PSE=VT-2. PSE=NO
-					REPAIRED .75" VALVE TO PIPE WELD	

Page No. 06/18/91

3

# ABSTRACT OF ASME XI REPAIRS AND REPLACEMENTS UNIT 1 CYCLE 11 REFUELING OUTAGE

CODE CLASS	EQUIPMENT ID	MAINTENANCE	SECTION XI TRAVELER	NIS-2 Signed	DESCRIPTION/PSE	
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	S1SIS6004-1"-CL S1SIS6005-1"-CL S1SISSV2900 S1SISSV3900 S1TCW892-4"-HM S1TCWCV2516 S1TCWCV515 S1TCWCV515 S1TCWCV525 S1THPMOV14 S1VCC2003-3"-BH3 S1VCC2003-3"-BH3 S1VCC2013-1/2"-HK S1VCC307 S1VCC308 S1VCC354 S1VCC354 S1VCCCV528 S1VCCCV528 S1VCCMOV1100C,E S1VCCRV289	90030632 90030634 90061739 90061768 90080845 90080635 90080635 90080635 90080635 90080635 90080635 90020495000 91020495000 90070262000 90070262000 90070268000 90070268000 90170268000 90070268000 90070268000 90070268000 90070268000 90070268000 90070268000 90070268000 90070268000	S01-90-008 S01-90-009 S01-90-015 S01-90-024 S01-90-026 S01-90-025 S01-91-008 S01-91-009 S01-91-012	03/07/91 03/07/91 03/08/91 03/07/91 01/02/91 02/02/91 03/19/91 03/19/91 03/02/91 04/24/91 03/02/91 04/20/91 05/09/91 01/27/91 03/19/91 02/23/91 05/15/91	REPLACED/ ADDED STRAINER REPLACEMENT-ADDED STRAINER TO SYSTEM REPAIRED BONNET SEAL WELD REPAIRED BONNET SEAL WELD REPLACEMENT-REROUTED SYSTEM REPLACMENT-ADDED NEW CONTROL VALVE REPLACEMENT-ADDED NEW CONTROL VALVE INSTALLED FLOW DIRECTION INDICATOR INSTALLED FLOW DIRECTION INDICATOR REPAIRED PACKING GLAND LEAK-OFF PLUG REPLACED VALVE & PIPE REPLACED VALVE & PIPE REPLACED VALVE & PIPE REPLACED VALVE & PIPE REPLACED VALVE W/90031813 W/89112850 INSTALLED FLOW DIRECTION INDICATOR REPLACED ADDED NEW MOV ARRAGEMENT REPLACED VALVE DISC	PSE=VT-2 PSE=VT-2 PSE=VT-2 PSE=VT-2 PSE=VT-2 PSE=N0 PSE=N0 PSE=N0 PSE=N0 PSE=VT-2 PSE=VT-2 PSE=VT-2 PSE=VT-2 PSE=VT-2 PSE=VT-2 PSE=VT-2 PSE=VT-2 PSE=VT-2 PSE=VT-2 PSE=VT-2

NIS-2
OWNER'S REPORT OF REPAIR OR REPLACEMENT

As Required by the Provisions of ASME Code Section XI	
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			Sheet 1 of 1	
1.	Owner: Southern Cali	fornia Edison Company	ASME MO: 91020	0840
	2244 Walnut (	Grove Ave., Rosemead, CA 91770	Unit: 1	
2.	Plant: San Onofre N P.O. Box 128,	uclear Generating Station San Clemente, CA 92674-0128	RS: GEN-004	
3.	Work Performed by:	Southern California Edison	<b>P&amp;ID:</b> 5178100 (D-7	)
4.	System Identification:	Reactor Coolant		

- (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber PSA 1-4	Pacific Scientific	13194	N/A	S1-01-5000-H-00A	N\A	Replaced	No
Mechanical Snubber PSA 1/4	Pacific Scientific	11157	N/A	RSO 2-P-170-84	1980	Replacement	No

7. Work Description:

The mechanical snubber was replaced as a preventative maintenance action. The replacement snubber was verified as meeting the requirements of the original construction code, as documented in code reconciliation CR-90-002. Prior to installation, the snubber was functionally tested and visually inspected (VT-4). After installation, the support assembly was visually inspected (VT-3).

Reference: NCR 91020073

8.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] VT-4 & VT-3 Pressure: N/A psig Temp: N/A

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<sup>5. (</sup>a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-1, Code Cases: None

## FORM NIS-2 (back)

9.	Remarks:	None
		(Applicable Manufacturer's Data Reports to be attached)
		CERTIFICATE OF COMPLIANCE
We ce	ertify that the st	atements made in this report are correct and this <u>replacement</u> conforms to the ode, Section XI. (repair or replacement)
Signe	i de	Heille Supry. ASME Codes Engineer 4/3_1991
	(Owne	or Owner's Designee) Title (Date)
		CERTIFICATE OF INSPECTION
	spectors and the actory Mutual Seport during the y knowledge and SME Code. By implied conce	holding a valid commission issued by the National Board of Boiler and Pressure Vessel e State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> <u>vstem</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's period from $2/9/9/1$ to $3/21/9/1$ and state that to the best of belief, this repair or replacement has been performed in accordance with Section XI of the igning this certificate, neither the Inspector nor his employer makes any warranty, expressed ning the repair or replacement in this Report. Furthermore, neither the Inspector nor his
en en	ployer shall be	liable in any manner for any personal injury or property damage or a loss of any kind arising with this inspection.
	11	Shaten Commissions 1574 California -
	spector's Signa	(State or Province, National Board)
D	ate April	<u>4 19 91</u>
L	• 	

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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NIS-2
OWNER'S REPORT OF REPAIR OR REPLACEMENT

	As Required by the Provisions of ASME Code	Section XI
<b></b>		Sheet 1 of 1
1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	ASME MO: 90102669 90102670
	2244 Wallat Olove Ave., Rosenead, CAP 91770	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128. San Clemente. CA 92674-0128	RS: GEN-004
3.	Work Performed by: Southern California Edison	P&ID: 5178100 (E-7)
4.	System Identification: Reactor Coolant	

- (a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-1, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber PSA-1 650#	Pacific Scientific	8200	N/A	S1-01-5000-H-00C	N/A	Replaced	No
Mechanical Snubber PSA-4" 650#	Pacific Scientific	20221	N/A	RSO 4358-85	1984	Replacement	No .
Mechanical Snubber PSA-4" 650#	Pacific Scientific	13105	: N/A	S1-01-5000-H-OFA	N/A	Replaced	No
Mechanical Snubber PSA-4" 650#	Pacific Scientific	20366	N/A	RSO 5140	1986	Replacement	No

#### 7. Work Description:

The mechanical snubbers were replaced as a preventative maintenance action. The replacement snubbers were verified as meeting the requirements of the original construction code, as documented in code reconciliation CR-90-002. Prior to installation, the snubber was functionally tested and visually inspected (VT-4). After installation, the support assembly was visually inspected (VT-3).

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] VT-4 & VT-3 Pressure: N/A psig Temp: N/A

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5.

### FORM NIS-2 (back)

9. Remarks:	None
	(Applicable Manufacturer's Data Reports to be attached)
	CERTIFICATE OF COMPLIANCE
rules of the ASME C	
Signed (Owne	r or Owner's Designee) Title (Date)
, ,	
L the undersigned	CERTIFICATE OF INSPECTION holding a valid commission issued by the National Board of Boiler and Pressure Vessel
Inspectors and th (Factory Mutual S Report during the	e State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> <u>vstem</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's period from $1/20/91$ to $3/21/92$ and state that to the best of belief, this repair or replacement has been performed in accordance with Section XI of the
ASME Code. By s	igning this certificate, neither the Inspector nor his employer makes any warranty, expressed ning the repair or replacement in this Report. Furthermore, neither the Inspector nor his
employer shall be from or connected	liable in any manner for any personal injury or property damage or a loss of any kind arising with this inspection.
Jourd C 9	costim Commissions 1574 California
Inspector's Signa	ture (State or Province, National Board)
Date April 4	19 <u>91</u>

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

	As Required by the Provisions of ASME Code 3	Section XI
		Sheet 1 of 1
1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	ASME MO: 90082523
		Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	<b>RS:</b> 320-90
3.	Work Performed by: Southern California Edison	<b>P&amp;ID:</b> 5178105
4.	System Identification: Reactor Coolant	

- 5. (a) Applicable Construction Code: ASA B31.1, 1980 Edition, Code Classified XI-1, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber PSA ½	Pacific Scientific	13776	N/A	S1-01-5011-H- 00N-A	N/A	Replaced	No
Mechanical Snubber PSA k	Pacific Scientific	15166	N/A	RSO 4190-84	1980	Replacement	No

### 7. Work Description:

8.

The mechanical snubber was replaced as a result of failing Technical Specification 4.14.C functional testing. The replacement was verified as meeting the requirements of the original construction code, as documented on code reconciliation CR-90-002. Prior to installation the snubber was functionally tested and visually inspected (VT-4). After installation the support assembly was visually inspected (VT-3).

Reference: NCR 9008021

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] VT-4 & VT-3 Pressure: N/A psig Temp: N/A

## FORM NIS-2 (back)

9.	Remarks:	None					
	<u></u>	· · - · ·	(Applicable Manufacturer's Data Reports to be attached)				
	•						
CERTIFICATE OF COMPLIANCE							
We cer rules of	tify that the st f the ASME C	atements m Code, Section	ade in this report are correct and this <u>replacement</u> conforms to the a XI: (repair or replacement)				
Signed	Nn	Nh	Q Supvg. ASME Codes Engineer 21 March 1991				
•	(Owne	r or Owner'	s Designee) Title (Date)				
			CERTIFICATE OF INSPECTION				
Insj (Fa Rep my ASI or i em	bectors and the ctory Mutual S wort during the knowledge and ME Code. By	he State or <u>System</u> ) of <u>N</u> e period from d belief, this signing this of ming the re- liable in any ed with this i					
Inspector's Signature (State or Province, National Board)							
	-	• •					
Da	te <u>MA</u>	nch 21	<u>19</u> <u>9/</u>				

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

		As Required by the Provisions of ASME C	Code Section XI
			Sheet 1 of 1
1.	Owner	Southern California Edison Company	ASME MO: 90080611
		2244 Walnut Grove Ave., Rosemead, CA 91770	Unit: 1
2.	Plant:	San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	RS: 321-90
3.	Work	Performed by: Southern California Edison	P&ID: 5178205
4.	System	Identification: Feedwater Heating	
5.	(a)	Applicable Construction Code: ANSI B31.1, 1980	Edition, Code Classified XI-2, Code Cases:
	<b>(b)</b>	Applicable Edition of Section XI Utilized for Repa	airs or Replacements: 1977 Edition, S'78

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

Identification of Components Repaired or Replaced:

Addenda, Code Cases: None

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber	Pacific Scientific	16853	N/A	S1-05-0318-E-013	N/A	Replaced	No
Mechanical Snubber	Pacific Scientific	15265 .	N/A	RSO 2-P-358-84 Part # 1801103-07	1983	Replacement	No

7. Work Description:

The mechanical snubber was replaced as a result of failing Technical Specification 4.14.C functional testing. The replacement was verified as meeting the requirements of the original construction code, as documented on code reconciliation CR-90-002. Prior to installation the snubber was functionally tested and visually inspected (VT-4). After installation the support assembly was visually inspected (VT-3).

References: NCR 90080044

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8.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other []

9. Remarks:	None
	(Applicable Manufacturer's Data Reports to be attached)
x	CERTIFICATE OF COMPLIANCE
We certify that the star rules of the ASME Co	ements made in this report are correct and this <u>replacement</u> conforms to th de, Section XI. (repair or replacement)
Signed (Owner	or Owner's Designee) Title (Date)
	CERTIFICATE OF INSPECTION
Inspectors and the (Factory Mutual Sy Report during the my knowledge and ASME Code. By si or implied, concer-	holding a valid commission issued by the National Board of Boiler and Pressure Vessel State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> tem) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's eriod from <u>10/15/90</u> to <u>5/30/91</u> and state that to the best of belief, this repair or replacement has been performed in accordance with Section XI of the ning this certificate, neither the Inspector nor his employer makes any warranty, expressed ing the repair or replacement in this Report. Furthermore, neither the Inspector nor his able in any manner for any personal injury or property damage or a loss of any kind arising
from or connected	with this inspection.
Inspector's Signat	Commissions <u>Heleful</u> California re (State or Province, National Board)
Date <u>May</u>	<u>30, 1991</u>
	· · · · · · · · · · · · · · · · · · ·

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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	As Required by the Provisions of ASME Code Section XI							
			Sheet 1	of 1				
1.	Owner: Southern Califo	Owner: Southern California Edison Company		ASME MO: 891116				
	2244 Walnut G	rove Ave., Rosemead, CA 91770	Unit:	1				
2.	Plant: San Onofre Nu P.O. Box 128, 3	iclear Generating Station San Clemente, CA 92674-0128	RS:	092-90	0			
3.	Work Performed by:	Southern California Edison	P&ID:	51781	30 (F-6)			
4.	System Identification:	Letdown						

- M - 1 - 1

5. (a) Applicable Construction Code: Westinghouse E-Spec. 676044, Code Classified: XI-1, Code Cases: None

- (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Globe Valve	BS&B	70-71415	N/A	S1-LDS-CV-203	N/A		No
Inner Valve with Integral Stem	Anchor Darling	<b>Et. 696831</b>	R/A	RSO 2377-90	N/A	Replacement	No

### 7. Work Description:

The valve leaked through. The stem and inner valve required replacement. The replacements were verified to be in compliance with the original construction code and installed. A VT-2 examination was conducted in conjunction with a system leakage pressure test with no leakage noted. Reference: NCR SO1-P-7416

Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 350 psig Temp: 270 °F

•	Remarks:	None	
		(Applio	cable Manufacturer's Data Reports to be attached)
		CEI	RTIFICATE OF COMPLIANCE
Ve cei ules o	rtify that the sta f the ASME Ca	atements made in ode, Section XI.	this report are correct and this <u>replacement</u> conforms to the (repair or replacement)
ligned	Dril	or Owner's Desi	Supvg. ASME Codes Engineer 21 March 199/ ignee) Title (Date)
	(Owner	or Owner's Desi	
		CE	ERTIFICATE OF INSPECTION
Ins (Fa Re) my AS or em	pectors and the <u>lectory Mutual Sy</u> port during the knowledge and ME Code. By si implied, concer- ployer shall be l	e State or Provin <u>vstem</u> ) of <u>Norwoo</u> period from <u></u> belief, this repair igning this certific ping the repair of	commission issued by the National Board of Boiler and Pressure Vessel nce of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> and <u>Massachusetts</u> have inspected the components described in this Owner's <u>Alifyin</u> to <u>3/21/91</u> and state that to the best of or replacement has been performed in accordance with Section XI of the tate, neither the Inspector nor his employer makes any warranty, expressed r replacement in this Report. Furthermore, neither the Inspector nor his ner for any personal injury or property damage or a loss of any kind arising tion.
In	<u>ADIAO</u> spector's Signat	ture Co	mmissions <u>1862</u> <u>California</u> (State or Province, National Board)
		<u>l 21, 19</u>	

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

As Required by the Provisions of ASME Code Section XI						
			Sheet	1 of 1		
1.	Owner: Southern Califo		ASME	MO: 90121256		
	2244 Walnut G	rove Ave., Rosemead, CA 91770	Unit:	1		
2.		iclear Generating Station San Clemente, CA 92674-0128	RS:	394-90		
3.	Work Performed by:	Southern California Edison	P&ID:	5178140		
4.	System Identification:	Leidown				

- 5. (a) Applicable Construction Code: SEP-403, Rev.1/ANSI B31.1, 1973 Edition, Code Classified XI-1, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component		facturer National ial No. Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" Ball Valve	Crosby Valve & 5091 Gage	N/A	S1-LDS-CV-526	N/A		No
2" Ball (Disc)	Crosby Valve & 801390 Gage	)-31-0001 N/A	RSO 1283-89	1988	Replacement	No

### 7. Work Description:

The valve failed the LLRT and required rework. The ball (disc) was replaced. The replacement was verified to be in compliance with the original construction code requirements.

8. Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 370 psig Temp: N/A

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Remarks: None
(Applicable Manufacturer's Data Reports to be attached)
CERTIFICATE OF COMPLIANCE
We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI: (repair or replacement) Signed <u>Mainful Supvg. ASME Codes Engineer</u> 4/2 1991 (Owner or Owner's Designee) Title (Date)
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from <u>2/1/9/</u> to <u>4/2/9/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. <u>Mathematical</u> Commissions <u>18/62</u> California Inspector's Signature (State or Province, National Board)
Date <u>April 2, 1991</u>

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

		As Required by the Provisions of ASME Cod	e Section XI		-
			Sheet 1	of 1	
1.	Owner: Southern Cali 2244 Walnut	ASME MO:		90111198 91010916	
			Unit:	1	/1010/10
2.	Plant: San Onofre N	uclear Generating Station			
	P.O. Box 128,	San Clemente, CA 92674-0128	RS:	006-91	
				010-91	
3.	Work Performed by:	Southern California Edison	P&ID:	5178130	)
A	System Identifications	Tetdom			

- 4. System Identification: Letdown
  - (a) Applicable Construction Code: Westinghouse E-Specification 676044, Code Classified XI-1, Code Cases: None
    - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" Control Valve	BS&B	70-71402	N/A	S1-LDS-LVC-1112	N/A		No
Inner Valve Assembly	Anchor Darling	A0803	N/A	RSO 006-91 ME-91-001	1986	Replacement	No
3/4" x 3% Stud	Carpenter Tech.	48368	N/A	RSO 0300-87 SA-193, Gr B8	N/A	Replacement	No
3/4"-10 H.H. Nut	AAG Engineering	8650125	N/A	RSO 3052-86 SA-194	N/A	Replacement	No

### 7. Work Description:

5.

### MO #90111198

The inner valve and bolting required replacement. The replacements were verified as complying with the original construction code requirements.

### MO #91010916

The valve stem was too long, which would not allow for proper alignment. The valve stem was cut to length to allow for proper alignment. An NDE/UT and PT were performed.

- Andrewski ha chi shi shu sana sa i susuliti nadirus si i - A susu a ta i

# Reference: NCR 90110124, ME-91-001, ME-91-002, ME-91-003

Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2085 psig Temp: 540 °F

(Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI. (repair or replacement)

o' 1	Millichle	Supvg. ASME Codes Engineer	6/8	_19 <u></u> 9/
Signed	(Owner or Owner's Designee)		(Date)	

# CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u>, employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>1/13/91</u> to <u>(c/8/91)</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Man Commissions 1862 California (State or Province, National Board) Inspector's Signature 14 d 19 91 Date

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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	OWNER	S REPORT OF REPAIR OR		CIVICIN	<u> </u>	
		As Required by the Provisions of ASME Cod	e Section XI			
			Sheet 1	of 1		
1.	Owner: Southern Califo 2244 Walnut G	ornia Edison Company rove Ave., Rosemead, CA 91770	ASME	MO:	90081628 90101833	
	2244 (10000) 0		Unit:	1		
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128		RS:	305-90 339-90		
3.	Work Performed by:	Southern California Edison	P&ID:	517822	5	•
4.	System Identification:	Main Steam				

5. (a) Applicable Construction Code: ASME Section VIII, 1962 Edition, S'64 Addenda, Code Classified XI-1, Code Cases: 1270N

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

#### 6. Identification of Components Repaired or Replaced:

	Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	• Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Steam	Generator	Westinghouse	16A4320-3	542	SI-MSS-E-1A	1965		Yes
(6) 1	.75" MW Studs	CE	Bt. J-6416-1	N/A	RSO 0215-86 SA-193, Gr B7	1986	Réplacement	No
(7) 1	.75" MW Nut	Arg. Eng. Co. Inc.	Ht. CD "CDZ"	N/A	RSO 2562-90 SA-194, Gr B7	1986	Replacement	No
(4) 1	.75" Helicoils	Westinghouse	Ht. 11004	N/A	RSO 2603-90 SA-479, Tp. 302	1986	Replacement	No

### 7. Work Description:

MO 90101833 - Steam generator manway studs were replaced in hole locations H1, H5, H6, C4, C10, and C-14. Manway nuts were replaced in hole locations H1, H3, H5, H6, H11, H12 and H15.

MO 90081628 - Helicoils were installed in hole locations H1, H5, H6, and C4.

The replacement studs, nuts, and helicoils were verified to be compatible with installation and system requirements. A satisfactory final VT-1 was conducted in the replacement.

References: NCR 9008020001, 9010128

8.

Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2085 psig Temp: 540 °F

Remarks	: None	
		(Applicable Manufacturer's Data Reports to be attached)
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Inspectors an (Factory Mut Report during my knowledge ASME Code. or implied, co employer sha	id the State or <u>ual System</u> ) of <u>P</u> g the period fro e and belief, this By signing this oncerning the re Il be liable in an	CERTIFICATE OF INSPECTION valid commission issued by the National Board of Boiler and Pressure Vessel Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> <u>Norwood, Massachusetts</u> have inspected the components described in this Owner's om $10/12/89$ to $6/12/91$ and state that to the best of s repair or replacement has been performed in accordance with Section XI of the certificate, neither the Inspector nor his employer makes any warranty, expressed epair or replacement in this Report. Furthermore, neither the Inspector nor his ny manner for any personal injury or property damage or a loss of any kind arising increation
	ected with this	Commissions <u>1862</u> California (State or Province, National Board)
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As Required by the Provisions of ASME Code Section XI Sheet 1 of 1 89100192 ASME MO: 1. Owner: Southern California Edison Company 90081629 2244 Walnut Grove Ave., Rosemead, CA 91770 90101834 Unit: 1 Plant: San Onofre Nuclear Generating Station 2. 306-90 RS: P.O. Box 128, San Clemente, CA 92674-0128 356-90 P&ID: 5178225 Southern California Edison 3. Work Performed by: 4. System Identification: Main Steam

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

- (a) Applicable Construction Code: ASME VIII, 1962 Edition, S'64 Addenda, Code Classified XI-1, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Steam Generator	Westinghouse	16A4320-1		S1-MSS-E-1B			Yes
1 3/4" MW Studs (6)	CE	Ht. J-6416-1	N/A	RSO 0215-86 E1,8,9,13 & 14	1986	Replacement	No
Nuts (3)	A&G Engineering	Ht. Code "CD2"	N/A	RSO 2562-90	N/A	Replacement	No
Helicoils (2)	Westinghouse	Et. 11004	N/A	RSO 2603-90	1986	Replacement	No

### 7. Work Description:

5.

Steam generator bolting (i.e., studs, nuts, and helicoils) which had relevant conditions noted during visual (VT-1) inspection were replaced. The replacements were verified to be in compliance with the original construction code requirements.

Three nuts on the hot leg side which had relevant condition were replaced without adequate documentation. This condition was documented on a nonconformance report and tracibility was verified. A subsequent VT-1 examination was conducted with no relevant indication noted. A VT-2 examination was conducted during a system pressure test.

Reference: NCR 91060043

8. Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2085 psig Temp: 540°F

9. Remarks: No	
	(Applicable Manufacturer's Data Reports to be attached)
	CERTIFICATE OF COMPLIANCE
We certify that the statement rules of the ASME Code, S	nts made in this report are correct and this <u>replacement</u> conforms to the ection XI. (repair or replacement)
Signed (Owner or O	Supvg. ASME Codes EngineerC/1719.91wner's Designee)Title(Date)
	CERTIFICATE OF INSPECTION
Inspectors and the Stat (Factory Mutual System Report during the perio my knowledge and belie ASME Code. By signing	ing a valid commission issued by the National Board of Boiler and Pressure Vessel te or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's and state that to the best of of from <u><math>03/15790</math></u> to <u><math>06/17/91</math></u> and state that to the best of if, this repair or replacement has been performed in accordance with Section XI of the g this certificate, neither the Inspector nor his employer makes any warranty, expressed the repair or replacement in this Report. Furthermore, neither the Inspector nor his in any manner for any personal injury or property damage or a loss of any kind arising this inspection.
Inspector's Signature	Commissions <u>1864</u> <u>California</u> (State or Province, National Board)
Date June	17 19 91
~ 11 in (2) infor	tets in the form of lists, sketches, or drawings may be used provided (1) size is $8-1/2$ in. mation in Items 1 through 4 on this data report is included on each sheet, and (3) each d and the number of sheets is recorded at the top of this form.
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		As Required by the Provisions of ASME Cod	e Section XI		
· ·			Sheet 1	of 1	
l.	Owner: Southern Califo 2244 Walnut G	ornia Edison Company rove Ave., Rosemead, CA 91770	ASME	MO:	89100193 90081602 90101835
2.		clear Generating Station	Unit:	1	
	P.O. Box 128, S	San Clemente, CA 92674-0128	RS:	304-90 346-90	
3.	Work Performed by:	Southern California Edison	P&ID:	5178225	5
1.	System Identification:	Main Steam			

520

- (a) Applicable Construction Code: ASME Section VIII-1, 1962 Edition, S'64 Addenda, Code Classified XI-1, Code Case: 1270N
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Steam Generator	Westinghouse	16A4320-3	542	S1-MSS-E-1C	1965		Yes
Manway Cover Stud Hot Leg ∉12	CE PMC Corp.	J-6416 BC. 74935	N/A	SA 193-B7 RSO 215-86	1986	Replaced	No
Manway Cover Stud Cold Leg #2, 3 & 13	CE PMC Corp.	J-6416 HC. 74935	N/A	SA 193-B7 RSO 215-86	1986	Replaced	No

### 7. Work Description:

5.

8.

Replaced one (1) manway cover stud on the hot leg side and three (3) manway cover studs on the cold leg side of the addressed steam generator. The replacement studs were verified to be in compliance with the original construction code requirements. A satisfactory VT-1 examination was conducted on the replacement studs in conjunction with the replacement studs for all three (3) steam generators as documented on MO 90081629. A VT-2 examination was conducted in conjunction with a system leakage test.

Reference: NCR 90080175

Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2080 psig Temp: 545°F

9.	Remarks:	None						
			(Applicable Man	nulacturer's Dat	a Reports to I	be attached)		
					COMPI	LANCE	-	
				CATE OF				
We cer rules o	ruify that the st f the ASME C	atements m Code, Sectio	ade in this re n XI.	port are corr	ect and this	s <u>replacen</u> (repair or re	eplacement)	conforms to the
	Ai m			Supvg. AS	ME Codes	Engineer	6/6	19 <u>_9/</u>
Signed	(Owner	r or Owner	's Designee)		Title		(Date)	
Ins (Fa Re my AS or em fro	pectors and th <u>ictory Mutual S</u> port during the knowledge and ME Code. By s implied, concer ployer shall be m or connecter <u>implied</u> , spector's Signa	the State or <u>system</u> ) of N e period from d belief, this signing this rning the re- liable in an d with this <u>system</u> ) for the system the sy	Province of forwood Mass m $\mathcal{H}/\mathcal{Z}$ repair or replicertificate, nei pair or replace y manner for a inspection.	<u>California</u> , e <u>sachusetts</u> hav <u>3/90</u> t lacement has ther the Insp ement in this any personal ons <u>18/6</u> (State or 1	mployed by re inspected been perfor ector nor his Report. F injury or pro	Arkwright T the component 7/9/ rmed in accor s employer ma Furthermore, r operty damage	and state the and state the dance with S akes any war neither the In e or a loss of	Pressure Vessel ance Company in this Owner's at to the best of ection XI of the ranty, expressed aspector nor his any kind arising
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		OWNER	As Required by the Provisions of ASME Coc		
			As Required by the Frontion of Front Dec	Sheet 2	1 of 1
1.	Owner:	Southern Calif	ornia Edison Company	ASME	MO: 90061212
		2244 Walnut C	2244 Walnut Grove Ave., Rosemead, CA 91770		1
2.	Plant:	San Onofre No P.O. Box 128,	uclear Generating Station San Clemente, CA 92674-0128	RS:	257-90
3.	Work	Performed by:	Southern California Edison	P&ID:	5178105
4.	System	1 Identification:	Pressurizer		
5.	(a)	Applicable Co Classified XI-	nstruction Code: ASME Section VIII- 1, Code Cases: 1270N to 1273N	1, 1962 Editio	on, No Addenda, Code
	(b)	Applicable Ed	lition of Section XI Utilized for Repair	rs or Replace	ments: 1977 Edition, S'78

6. Identification of Components Repaired or Replaced:

Addenda, Code Cases: None

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Pressurizer	Westinghouse	16A-4850-1	608	S1-PZR-C-2	1965		Yes
Cap Screws (4)	Westinghouse	Et. Code "W632"	N/A	RSO 8575-84 SA-193, Gr B7	1974	Replacement	No

7. Work Description:

During removal of the upper manway cover on the Unit 1 pressurizer, four (4) bolts were found degraded and required replacement. The replacement bolting  $(1 3/4" D \times 8 5/8" \log, SA-193, Gr B7)$  were evaluated as meeting the original construction code requirements. A VT-1 examination was conducted on the replacement bolting with no relevant indications noted.

References: NCR 90070036, ME-90-036

8.

Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2080 psig Temp: 545 °F

9.	Remarks:	None		•
. •	<u></u>		(Applicable Manufacturer's Data Reports to be attached)	
			CERTIFICATE OF COMPLIANCE	
We cer rules o Signed	f the ASME C	Code, Section	Supvg. ASME Codes Engineer 4/3 19.9/	
	(Owne	f or Owner	's Designee) Title (Date)	_
			CERTIFICATE OF INSPECTION	
Insj (Fa Rej my AS or em	pectors and the ctory Mutual S port during the knowledge and ME Code. By s	the State or $\frac{(vstem)}{(vstem)}$ of $\underline{N}$ $\frac{(vstem)}{(vstem)}$ s repair or replacement has been performed in accordance with Section XI of the certificate, neither the Inspector nor his employer makes any warranty, expressed epair or replacement in this Report. Furthermore, neither the Inspector nor his y manner for any personal injury or property damage or a loss of any kind arising		
In	spector's Signa		Commissions <u>18/62 California</u> (State or Province, National Board)	
Da	te <u>Apri</u>	14,	_19 <u>9/</u>	

Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. Note: x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	As Required by the Provisions of ASME Coo	le Section XI
		Sheet 1 of 1
1.	Owner: Southern California Edison Company	ASME MO: 89111979
	2244 Walnut Grove Ave., Rosemead, CA 91770	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	RS: 273-90
3.	Work Performed by: Southern California Edison	P&ID: 5178105
4.	System Identification: Pressurizer	

- (a) Applicable Construction Code: Westinghouse E-Spec. 676044, Code Classified XI-1, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" Globe Valve	BSAB	70-71390	R/A	S1-PZR-CV-545	N/A	Repaired	No

### 7. Work Description:

. . . .

5.

8.

The gasket sealing surface of the bonnet was machined to increase the crush of the lower (seat/cage) gasket. .005" of material was removed. A PT examination was performed on the machined surface. The valve was reassembled in accordance with procedure SO1-I-6.59.

Reference: NCR 90080274

Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] VT-2 Examination

Pressure: 2070 psig Temp: 530 °F

9.	Remarks:	None						
			(Applicable Ma	nufacturer's Da	ta Reports to b	e attached)		
	. •							
			CERTIFI	<u>CATE OF</u>	COMPLI	ANCE		
We c	ertify that the st	atements ma	ide in this rej	port are corr	ect and this	<u>repair</u>		forms to the
rules	of the ASME C	ode, Section	XI:			(repair or r	eplacement)	•
Signe	a AM	12m	L_	Supvg. AS	ME Codes E	Engineer	19 Apr:1	_19 <u>_9</u>
Ũ		or Owner's	Designee)		Title		(Date)	·
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			CERTIF	ICATE O	F INSPEC	TION		
In (FR m A or er fr	the undersigned spectors and th actory Mutual S eport during the y knowledge and SME Code. By s implied, concer nployer shall be om or connected aspector's Signat	e State or J vstem) of No period from belief, this igning this co ning the rep liable in any l with this in	Province of <u>orwood</u> , <u>Mass</u> <u>09/17</u> repair or replectificate, neit pair or replace manner for a	California, en achusetts have $2/90$ to accement has ther the Inspe- ement in this ny personal i	nployed by e inspected to been perform ector nor his Report. Fu njury or prop	<u>Arkwright</u> he compone <u>O/G/</u> ned in accor employer m rthermore, r perty damage	Mutual Insuran nts described in and state that dance with Sec akes any warran neither the Insp e or a loss of an	a this Owner's to the best of tion XI of the nty, expressed pector nor his
D	ate <u>April</u>	. 20	19 91			- -		
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEM</u> <u>As Required by the Provisions of ASME Code</u>	<u>ENT</u> Section XI
====		
1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	ASME M.O.: <u>89110419</u>
	2244 Warnut Grove Ave., Rosenead, CA 51770	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P. O. Box 128, San Clemente, CA 92672	<b>RS:</b> 672-89, Rev. 1
3.	Work Performed by: Southern California Edison	<b>P&amp;ID: 5</b> 178105/grid B-3

4.

System Identification: Pressurizer (PZR)

- 5. (a) Applicable Valve Manufacturing Code: Westinghouse Specification E-676044
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'79 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Mfr.	Mfr. Serial No.	Nat'l Bd. No.	Other Identi- fication	Year Built	Repaired, Replaced or Replacement	ASME Code Stamped Yes/No
Control Valve	Black, Sivalls & Bryson	70-71368	N/A	S1-PZR-PCV-430H	N/A	Repaired	No
<u>Weld Filler</u> <u>Metal</u> : ER316L SFA 5.9, 1/16" and 3/32"	Johnston Stainless	heat no S468557	N/A	RSO-5508-84	N/A	Repair Weld Metal	Yes

#### 7. Work Description:

The packing flush outlet line from the bonnet to valve S1-PZR-027 was broken when accidently hit by scaffolding (Reference NCR #SO1-P-7392). The disposition required replacing the broken pipe nipple. During implementation of this work the packing flush inlet nipple on the opposite side of the bonnet (from valve S1-PZR-023) was cut off in error. Both lines were threaded into the bonnet but are not within the scope of ASME Section XI. Due to thread damage in the ports the threads were drilled out on both connections to a depth of 3/8" to allow socket welding the replacement sections of  $\frac{1}{4}$ " NPS piping to the bonnet. The welding was completed as documented on weld record number WRI-89-880.

Tests Conducted: System Leakage [X] System Functional [] System Inservice [] 8. Hydrostatic [] Pneumatic [] Test Pressure: 2090 psig, Test Temp.: 545°F

9. Remarks: None

(Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>REPAIR</u> conforms to the rules of the ASME Code, Section XI. (repair or replacement)

Signed at theile	(Supvg.	ASME Codes Engineer)	11/24 19 90
(Owner or Owner's Designee)	)	Title	(Date)

	CERTIFICATE OF INSPECTION	
Boiler and Pressure Vessel <u>California</u> , employed by <u>Arl</u> <u>System</u> ) of <u>Norwood</u> , <u>Massach</u> this Owner's Report during and state that to the best replacement has been perfor Code. By signing this cert makes any warranty, express replacement in this Report employer shall be liable in damage or a loss of any kin <u>Animation</u> Inspector's Signature	a valid commission issued by the National Board of Inspectors and the State or Province of <u>wright Mutual Insurance Company (Factory Mutual</u> <u>nusetts</u> have inspected the components described in the period from <u>11989</u> to <u>412590</u> of my knowledge and belief, this repair or rmed in accordance with Section XI of the ASME ificate, neither the Inspector nor his employer sed or implied, concerning the repair or . Furthermore, neither the Inspector nor his in any manner for any personal injury or property and arising from or connected with this inspection. . Commissions <u>California 1574</u> (State or Province, National Board) 19 <u>90</u>	
used provided (1) through 4 on this sheet is numbered this form.	ts in the form of lists, sketches, or drawings may be size is 8-1/2 in. x 11 in., (2) information in Items data report is included on each sheet, and (3) each and the number of sheets is recorded at the top of	1

### NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT As Required by the Provisions of ASME Code Section XI

17 17 AND 17 AL

		***************************************		
1.	Owner:	Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	Travel	er: ASME MO
		2244 Walliut Grove Ave., Rosemeau, CA 51770	Unit:	1 -
2.	Plant:	San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92672	MERS:	278-89
3.	Work Pe	rformed by: Southern California Edison	M.O.:	89052422
4.	System	Identification: Pressurizer (RCS)	P&ID:	5178105 (E-5)

- (a) Applicable Construction Code: Westinghouse E-Spec 675197 ASME I, 1962 Ed., 5. W'63 Add. Code Cases: N/A Applicable Edition of Section XI Utilized for Repairs or Replacements:
  - (b) 1977 Edition, S'78 Addenda, Code Cases: N/A
- Identification of Components Repaired or Replaced: 6.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
3 K26 Relief Valve	Crosby	47469-M-1	N/A	\$1-PZR-RV-532		Replaced	Yes
3 K26 Relief Valve	Crosby	N51185-02-0001	N/A	RSO-1701-89	1980	Replacement	Yes

Work Description: 7.

•

1. Verified that the replacement valve meets the original design/construction code. Verified the replacement valve was one of the valves listed on MERs 230-89 or 231-89 and it was refurbished at Westinghouse.

2. Removed existing valve.

3. Performed VT-1 of existing bolting.

- 4. Installed replacement valve.
- 5. Performed a System Leakage Pressure Test with VT-2 Examination.

**Tests Conducted:** System Leakage [x] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2090 psig Temp: 540°F 8.

9. Remarks: None

(Applicable Manufacturer's Data Reports to be attached) CERTIFICATE OF COMPLIANCE We certify that the statements made in this report are correct and this conforms to the rules of the ASME Code, Section XI. Replacement (repair or replacement) 1989 (Supvg. ASME Codes Engineer) Signed 💋 (Owner or Owner's Designee) Title CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual <u>System</u>) of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from 5/29/89 to 7/5/89 and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. Commissions 1272 California Inspector's Signature (State or Province, National Board) 1989 Date Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Note: Items 1 through 4 on this data report is included on each sheet, and

(3) each sheet is numbered and the number of sheets is recorded at the

top of this form.

			As Required by the Provisions of ASME C	ode Section XI			
				Sheet 1	ot 1		
1.	Owner:		ornia Edison Company Grove Ave., Rosemead, CA 91770	ASME	MO:	89100177	
		2244 Walnut C	frove Ave., Rosemeau, CA 91770	Unit:	1		
2.	Plant:		uclear Generating Station San Clemente, CA 92674-012S	RS:	242-90	)	
3.	Work H	erformed by:	Southern California Edison	P&ID:	517810	05	
4.	System	Identification:	Pressurizer Reactor Coolant				

Applicable Construction Code: ASME Section I, 1962 Edition, No Addenda, Code Classified (a) XI-1, Code Cases: None

Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 **(b)** Addenda, Code Cases: None

6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
6" Safety Valve	Crosby	N51185-02-0001	N/A	S1-PZR-RV-532	N/A	Replaced	Yes
6" Safety Valve	Crosby	N47469-M2	N/A	RSO 2232-90	1962	Replacement	Yes

#### 7. Work Description:

5.

8.

Safety valve (S/N N51185-02-0001) installed in plant postion S1-PZR-RV-532 was replaced with a tested spare valve. The replacement safety valve was verified to be in compliance with the original construction code and installed. A VT-2 examination was conducted in conjunction with a system leakage pressure test with satisfactory results.

Note: The serial numbers were changed from 47469-M1 to N47469-M2 by R.V. Manufacturing.

Reference: NCR 90070339

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Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other []

Pressure: 2085 psig Temp: 535 °F

an an garage a

9.	Remarks:	None					
	<u> </u>	(Applica	ible Manufacturer	's Data Reports to b	e attached)		
		CER	TIFICATE	OF COMPL	<u>IANCE</u>		
We cer rules c	rtify that the state of the ASME Coo	ements made in le, Section XI:			(repair or repla	cement)	conforms to the
Signed	NNN	me	Supvg	ASME Codes I	Engineer 4/2	2	19 <u>9</u> /
•	(Owner o	or Owner's Desig	nee)	Title		(Date)	
					_		
		CE	RTIFICATE	E OF INSPEC	TION		
Ins (Fa Re my AS or em fro	he undersigned h pectors and the <u>ctory Mutual Sys</u> port during the p knowledge and b ME Code. By sign implied, concerni ployer shall be lias m or connected y <u>utor</u> () () () () () () () () () () () () ()	State or Proving tem) of Norwood eriod from <u>59</u> elief, this repair ning this certifican ng the repair or able in any manner with this inspection	ce of <u>Californi</u> , <u>Massachusett</u> <u>07/90</u> or replacement te, neither the replacement in or for any perso on.	a, employed by s have inspected to <u>04/20</u> has been perfor. Inspector nor his this Report. Fu	Arkwright Mill the components / 7/ and med in accordan employer makes inthermore, neit perty damage or	described I state that ce with So s any warn her the Ir	in this Owner's at to the best of ection XI of the ranty, expressed aspector nor his
Da	te <u>4/22/</u>	19	1				
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

<u>بن</u> ...

		OWNER	REPLACE Section XI	EMENT	
:			As Required by the Provisions of ASME Code	Sheet 1	ot 1
1.	Owner:	Southern Califo	ornia Edison Company	Travele	r: SO1-90-018
		2244 Walnut G	rove Ave., Rosemead, CA 91770	Unit:	1
2.	Plant:	San Onofre Nu P.O. Box 128, S	clear Generating Station San Clemente, CA 92674-0128	RS:	224-90
3.	Work Performed by:		Crosby Valve & Gage	MO:	89122251
4.	System	Identification:	Reactor Coolant System	P&ID:	5178105

NIS-2

- Applicable Construction Code: Westinghouse Equipment Specification 675197, Code Classified (a) XI-1, Code Cases: None
  - Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 **(b)** Addenda, Code Cases: None
- Identification of Components Repaired or Replaced: 6.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
3" X 6" Pressurizer Safety Valve	Crosby Valve & Gage	47469-532	N/A	024-18820 (47469-M1-532)			Yes (NV)
Nozzle	Crosby Valve & Gage	N95583-31-0002	N/A	RSO 1208-90 ME-90-037 SA-182, F316 Fart# N95583-31		Replacement	No
Disc	Crosby Valve & Gage	N95584-31-0005	N/A	RSO 1208-90 ME-90-038 SA-638 Alloy N07718 Part# N95584-31		Replacement	No

#### 7. Work Description:

5.

The safety valve was sent offsite (Westinghouse, Beaumont Facility) for overhaul. Overhaul work and replacement parts were documented on Traveler SO1-90-018. Replacement parts were verified as meeting Westinghouse Spec 675197 (ref. Code Reconciliations listed above). Valve disassembly and testing were performed per SCE Mini-Specs SO1-408-1 and SO1-408-2.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] 8. Pneumatic [] Other [X] N/A Pressure: N/A psig Temp: N/A

(Applicable Manufacturer's Data Reports to be attached)         CERTIFICATE OF COMPLIANCE         We certify that the statements made in this report are correct and this repair or replacement)         Signed	9.	Remarks:	A system pressure	test was perfor	rmed after i	nstallation.		
We certify that the statements made in this report are correct and this repair conforms to the rules of the ASME Code, Section XI.       conforms to the replacement)         Signed       Supvg. ASME Codes Engineer       199'         (Owner or Owner's Designee)       Title       (Date)         CERTIFICATE OF INSPECTION         I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel         Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from//2/0/ to	•		(Applicable	Manufacturer's Da	ata Reports to	be attached)		
We certify that the statements made in this report are correct and this repair conforms to the rules of the ASME Code, Section XI.       conforms to the replacement)         Signed       Supvg. ASME Codes Engineer       199'         (Owner or Owner's Designee)       Title       (Date)         CERTIFICATE OF INSPECTION         I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel         Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from//2/0/ to		. ·						
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We certify that the statements made in this report are context and an intervention of the ASME Code, Section XI.       (repair or replacement)         Signed       Marked Market       Supvg. ASME Codes Engineer       199 / (Date)         Signed       Market Market       Supvg. ASME Codes Engineer       199 / (Date)         (Owner or Owner's Designee)         CERTIFICATE OF INSPECTION         I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel         Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company         (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's         Report during the period from       7/2/90 to 6/5/97/201 and state that to the best of my knowledge and belief, this repair/or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.         (Market or Province, National Board)       (State or Province, National Board)			CERT	FICATE OF	F COMPL	IANCE		
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CERTIFICATE OF INSPECTION         Interview of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Contrel of Contrel of Contrel of Control of Control of Control of Cont	Simed	an	Be. Jel	Supvg. AS	ME Codes	Engineer	6/3	_19 <u>9</u> /
CERTIFICATE OF INSPECTION         I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of Norwood, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>7/2/90</u> to <u>6/5/6/</u> and state that to the best of my knowledge and belief, this repair/or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. <u>Mathematicate</u> Commissions <u>1862</u> California Inspector's Signature	Signed	(Owne	r or Owner's Designer	e)	Title		(Date)	
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of Norwood Massachusetts have inspected the components described in this Owner's Report during the period from <u>7/2/90</u> to <u>6/8/6/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. <u>Mathematical Mathematical California</u> Inspector's Signature (State or Province, National Board)								
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of Norwood Massachusetts have inspected the components described in this Owner's Report during the period from <u>7/2/90</u> to <u>6/8/6/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. <u>Mathematical Mathematical California</u> Inspector's Signature (State or Province, National Board)								
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> ( <u>Factory Mutual System</u> ) of <u>Norwood Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>7/2/90</u> to <u>6/8/6/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. <u>Mathematical Mathematical California</u> Inspector's Signature (State or Province, National Board)			CER	TIFICATE O	F INSPE	CTION		
	Ins (Fi Re my AS or em fro In	pectors and th actory Mutual S port during the knowledge and ME Code. By s implied, concer- imployer shall be on or connecte	he State or Province <u>bystem</u> ) of <u>Norwood</u> , <u>M</u> e period from <u>7</u> / d belief, this repair or signing this certificate, rning the repair or rep liable in any manner f d with this inspection. <u>Apple 100</u> Comm ature	of <u>California</u> , 6 <u>Lassachusetts</u> ha <u>2/90</u> replacement has neither the Insp placement in thi or any personal issions <u>186</u> (State or	2 Califo	rmed in accor s employer m Furthermore, s operty damage	nts described and state tha dance with Se akes any warr neither the In e or a loss of a	in this Owner's t to the best of ction XI of the anty, expressed spector nor his
	Note	Supplement	al sheets in the form	of lists, sketche	s, or drawin	gs may be us	sed provided (	(1) size is $8 - 1/2$

in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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		EMÈNT			
		As Required by the Provisions of ASME Code	Sheet 1	of 1	
_	Ourmore	Southern California Edison Company	Travele	sci-90-028	
1.	Owner:	2244 Walnut Grove Ave., Rosemead, CA 91770	Unit:	1	
2.	Plant:	San Onofre Nuclear Generating Station P.O. Box 12S, San Clemente, CA 92674-0128	RS:	301-90	

Work Performed by: Southern California Edison MO: 90081434 P&ID: N/A

4. System Identification: Pressurizer (Spare)

3.

5.

 (a) Applicable Construction Code: ASME Section III, 1968 Edition, S'68 Addenda, Code Cases: None; Reference SCE Spec. SOBS-2, Rev. 1

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None; Component is Code Classified XI-1

# 6. Identification of Components Repaired or Replaced:

						Repaired,	Stamped
Name of	Name of	Manufacturer	National	Other Identification	Year Built	Replaced, or Replacement	Yes/No
Component	Manufacturer	Serial No. N51185-02-0001	Board No. N/A	S1-PZR-RV-532	1980		Yes
C. C. Malara	Gaze	· · · ·		RSO 1640-90		Replacement	No
Nozzle	Crosby Valve & Gage	N95585-31-0002		SA182, F316	ļ	Replacement	No
Disc	Crosby Valve & Gage	N95584-32-0008	N/A	RSO 1994-90 SB637, N00718			

## 7. Work Description:

The nozzle and disc were replaced with modified design replacements in accordance with FCN S5061M. The replacement parts were reconciled with the original construction code and installed during the overhaul of the valve at a Westinghouse offsite facility. The reassembly and testing were performed in accordance with SO1-408-8 and SO1-408-2. A Receiving Inspection was performed on the valve upon its return to the site and documented on RSO 2701-90.

References: ME-90-057 (nozzle), ME-90-058 (disc)

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] N/A

9. Remarks: This is a spare valve. A system pressure test will be conducted when the relief valve will be installed.

(Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> \_ conforms to the (repair or replacement) rules of the ASME Code, Section XI. Supvg. ASME Codes Engineer 23 Apr. Title (Date) Signed (Owner or Owner's Designee) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from 9/11/90 to 4/28/91 and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. <u>A Con gran</u> Commissions <u>1862</u> <u>California</u> rs Signature (State or Province, National Board) Inspector's Signature 28 1991 Date

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

NIS-2									
<u>OWNER'S</u>	REPORT OF REPAIR OR REPLACEMENT								
As Required by	the Provisions of ASME Code Section XI	[							

1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	ASME M.O.: <u>89052421</u> 89053288
2.	Plant: San Onofre Nuclear Generating Station P. O. Box 128, San Clemente, CA 92672	Unit: 1 MERS: 279-89, 294-89
3.	Work Performed by: Southern California Edison	P&ID.: 5178105

- 4. System Identification: Pressurizer (PZR)
- 5. (a) Applicable Construction Code: ASME Section I, 1962 Edition, W'63 addenda and Westinghouse Equipment Specification E-675197 revision 1, Code Cases: Special Ruling 1271 N
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

6.	Identification	of	Components	Repai	red	or	Replaced:
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Name of Component	Name of Mfr.	Mfr. Serial No.	Nat'l Bd. No.	Other Identi- fication	Year Built	Repaired, Replaced or Replacement	ASME Code Stamped Yes/No
		N51185- 02-0002	N/A	S1-PZR-RV-533	1980	Replaced	Yes
size 3K26		47469- M-1-533	N/A	RSO 1702-89 SOG-89-002	1964 (est.)	Replacement	Yes
Studs: <u>SA-193 gr B7</u> Nuts: <u>SA-194 gr 2H</u>	Nova Machine Products	ht trace MW6 ht trace QL60	N/A	RSO 1777-89 studs & nuts	N/A	Replacement	No

### 7. Work Description:

Pressurizer Safety Relief Valve serial number N51185-02-0002 experienced seat leakage and was scheduled for replacement with a rebuilt spare. During removal some of the inlet flange bolting was determined to be in need of replacement. A replacement valve refurbished as documented in ASME Section XI Traveler SOG-89-002 was obtained and installed in plant location S1-PZR-RV-533. Replacement bolting reconciled to the original construction code as per ASME Section XI, IWA-7210 (c) was obtained and VT-1 examined. The VT-1 examination results were satisfactory and the bolting was installed.

8. Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Test Pressure: 2090 psig, Test Temp.: 540 <sup>o</sup>F

9. Remarks: M.O. 89052421 documents the material verification, installation and VT-2 pressure testing of the installed valve. M.O. 89053288 documents the material verification and installation of the replacement inlet flange studs and nuts.

# (Applicable Manufacturer's Data Reports to be attached)

### CERTIFICATE OF COMPLIANCE

			OF INSPECTION		•	
I, the undersi Boiler and Pre	gned holding	a valid comm	ission issued	by the Nat	ional Board	d of
<u>California</u> , em <u>System</u> ) of <u>Nor</u>	ployed by <u>Ark</u>	wright Mutua	<u>1 Insurance Co</u>	mpany (Fac	tory Mutual	1
System) of Nor	wood, Massach	usetts have	inspected the	components	described	in
this Owner's R and state that	to the best	the period f of my knowle	dge and belief	<u>, this rep</u>	<u>/6/87</u> air or	<u> </u>
replacement ha	s been perfor	med in accor	dance with Sec	tion XI of	the ASME	
Code. By signi makes any warr						
replacement in	this Report.	Furthermor	e, neither the	Inspector	nor his	
employer shall damage or a lo	be liable in	any manner d arising fr	for any person om or connecte	al injury d with thi	or property s inspectio	y
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0211	A	Commission	s 1 <u>272 Califo</u>	rnia		
Inspector's S	ignature		(State or Pro	vince, Nat	ional Board	d)
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Date	- 7/7	19_89				
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	NIS-2	
OWNER'S REPORT	OF REPAIR OR	REPLACEMENT

		As Required by the Provisions of ASME Cod	le Section XI Sheet 1	ot 1	
1.	Owner: Southern Calif	ornia Edison Company	ASME	MO:	89100178
	2244 Walnut C	Grove Ave., Rosemead, CA 91770	Unit:	1	
2.	Plant: San Onofre Nu P.O. Box 128,	uclear Generating Station San Clemente, CA 92674-0128	RS:	243-90	)
3.	Work Performed by:	Southern California Edison	P&ID:	517810	05
4.	System Identification:	Pressurizer			

- 5. (a) Applicable Construction Code: ASME Section I, 1962 Edition, Code Classified XI-1, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Safety Valve	Crosby	47469-M1-533	N/A	S1-PZR-RV-533	N/A	Replaced	N/A
Safety Valve	Crosby	N51185-02-0002	N/A	RSO 2232-90	1968	Replacement	Yes

7. Work Description:

Safety valve (S/N 47469-M1-533) installed in plant position S1-PZR-RV-533 is to be replaced with a tested spare. Replacement safety valve was verified to be in compliance with the original construction code and installed. A VT-2 examination in conjunction with a system leakage pressure test was performed with satisfactory results.

Reference: NCR 90060011

Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2085 psig Temp: 535 °F

9.	<b>Remarks:</b>	None					
			(Applicable Manufa	cturer's Data Reports to	be attached)		
					IANCE		
			CERTIFICA	TE OF COMPL	<u>LANCE</u>		
We c	ertify that the s of the ASME (	tatements m	ade in this report	t are correct and thi	s <u>replacen</u> (repair or re	the second second second second second second second second second second second second second second second s	conforms to the
Signe	d	Maile	k s	upvg. ASME Codes	Engineer	<u> 4/3</u>	_19 <b>9</b> 1
•	(Owne	er/or Owner'	s Designee)	Title		(Dale)	
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	war ()	histon	Commissions	<u>1574</u> Califo State or Province, N		)	
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I I	Date Acril	4	19 91	· · · ·			

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

		OWNER'	S REPORT OF REPAIR OR R	EPLACE	EMEN	<u>r</u>	
			As Required by the Provisions of ASME Code S				
				Sheet 1	of 1		
1.	. Owner: Southern Cal		rnia Edison Company	Travele	r.	SO1-90-027	
	22	244 Walnut Gi	rove Ave., Rosemead, CA 91770	Unit:	1		
2.	Plant: Sa P	an Onofre Nu .O. Box 128, S	clear Generating Station San Clemente, CA 92674-0128	RS:	300-90		
3.	Work Per	formed by:	Croșby Valve & Gage Company	MO:	900814	35	
4.	System Id	entification:	Reactor Coolant	P&ID:	N/A		

- (a) Applicable Construction Code: Westinghouse Equipment Specification 675197, Code Classified XI-1, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
3" x 6" Safety Valve	Crosby	47469-533*	N/A	S1-PZR-RV-533 RSO 2701-90	1980		Yes
Nozzle	Crosby	N95583-31-0001	N/A	RSO 1208-90 SA-182, F316	N/A	Replacement	No
Disc Insert	Crosby	N95584-31-0004	N/A	RSO 1208-90 SB-637-N07718	N/A	Replacement	No

#### 7. Work Description:

5.

In conjunction with the overhaul of the safety valve, a new design nozzle and disc insert were replaced in accordance with the referenced FCN. The replacement nozzle and disc were verified to be in compliance with the original construction code as reconciled by SCE material evaluations ME-90-059 and ME-90-060.

### Reference: FCN S5062M

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] Pressure test to be performed on installation MO. Pressure: N/A psig Temp: N/A

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\*This is the original serial number of this relief valve. Crosby adds a "M" designation number to the serial number when modification have performed by Crosby. For tracking purpose this "M" designation has not been noted.

(Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this reprules of the ASME Code, Section XI.	port are correct and this _ (		
Signed <u>(Owner or Owner's Designee</u> )	<u>Supvg. ASME Codes Er</u> Title	ngineer 6/3 (Date)	19 <u>`</u> 9/
CERTIF I, the undersigned holding a valid commiss Inspectors and the State or Province of $(\underline{Factory Mutual System})$ of Norwood, Mass Report during the period from $\underline{-\mathcal{I}/1/2}$ my knowledge and belief, this repair or repl ASME Code. By signing this certificate, neit or implied, concerning the repair or replace employer shall be liable in any manner for a	<u>California</u> , employed by <u>achusetts</u> have inspected th <u>90</u> to <u>68</u> accement has been perform ther the Inspector nor his e ement in this Report. Fur	al Board of Boiler and Arkwright Mutual Insur- the components described (9) and state th and in accordance with S employer makes any war othermore, neither the I	d in this Owner's at to the best of Section XI of the ranty, expressed nspector nor his

from or connected with this inspection.

Inspector's Signature	Commissions <u>186 Z California</u> (State or Province, National Board)
Date 15	9 <u>91</u>

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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	<u>OWNER</u>	S REPORT OF REPAIR OR		<u>EMEN</u>	<u>T</u> .	
		As Required by the Provisions of ASME Code				
اد بینیانی ا			Sheet 1	. of 1		
1.	Owner: Southern Califo	rnia Edison Company rove Ave., Rosemead, CA 91770	Travele	:r:	SO1-90-019	
	Zz++ Wallot O.	ore Are., Rosemella, er vive	Unit:	1		•
2.	Plant: San Onofre Nu P.O. Box 128, S	clear Generating Station an Clemente, CA 92674-0128	RS:	225-90	•	
3.	Work Performed by:	Southern California Edison	MO:	891222	56	
4.	System Identification:	Pressurizer (Spare)	P&ID:	N/A		

- (a) Applicable Construction Code: ASME Section III, 1968 Edition, S'68 Addenda, Code Cases: None; Reference SCE Spec. SOBS-2, Rev. 1
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None; Component is Code Classified XI-1
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
3" x 6" Pressurizer Safety Valve	Crosby Valve & Gage	N51185-02-0002	N/A	S1-PZR-RV-533	1980		Yes
Nozzle	Crosby Valve & Gage	N95585-31-0001	N/A	RSO 1640-90 5A182, F316		Replacement	lio
Disc	Crosby Valve & Gage	N95584-32-0006	N/A	RSO 1994-90 SB637, N00718		Replacement	No

### 7. Work Description:

5.

8.

The nozzle and disc were replaced with modified design replacements in accordance with FCN S5061M. The replacement parts were reconciled with the original construction code and installed during the overhaul of the valve at a Westinghouse offsite facility. The reassembly and testing were performed in accordance with SO1-408-8 and SO1-408-2. A Receiving Inspection was performed on the valve upon its return to the site and documented on RSO 2701-90.

References: ME-90-039 (nozzle), ME-90-040 (disc)

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Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] N/A

9.

Remarks: This is a spare value. A system pressure test will be conducted when the relief value will be installed.

(Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this rep	port are correct and this <u>replacement</u>	
rules of the ASME Code, Section XI.	(repair or repl	acement)
signed Aly Une	Supvg. ASME Codes Engineer 23	April 1991
(Owner or Owner's Designee)	Title	(Date)

# CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u>, employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from 7/2/90 to 1/209/1 and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected) with this inspection.

Found Santon C Inspector's Signature	Commissions <u>1574 California</u> (State or Province, National Board)
Date 11173_19	91
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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	OWNER	'S REPORT OF REPAIR OR		<u>EMEN</u>	T	
		As Required by the Provisions of ASME Cod				
			Sheet	1 of 1		
1.	Owner: Southern Califo	ornia Edison Company rove Ave., Rosemead, CA 91770	ASME	MO:	90071543 000	
	2244 Walhul G	rove Ave., Rosenical, CA 51110	Unit:	1		
2.	Plant: San Onofre Nu P.O. Box 128, 3	clear Generating Station San Clemente, CA 92674-0128	RS:	262-90	)	
3.	Work Performed by:	Southern California Edison	P&ID:	51781	11/F9	
4.	System Identification:	Reactor Coolant Pump Seal Water S	System			

NIS-2

Applicable Construction Code: ASA B31.1, 1955 edition (Code Classified XI-1) (a)

Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 **(b)** Addenda, Code Cases: None

Identification of Components Repaired or Replaced: 6.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Piping	Bechtel	N/A	N/A	S1-RCP-2020-2"- BE2	- 1966		No

#### 7. Work Description:

5.

Line S1-RCP-2020-BH2 was cut at an existing socketweld joint to facilitate removal of the reactor coolant pump. The socketweld joint was rewelded per WR1-90-515 after reinstallation of the pump. A PT exam was performed on the weld prep area and on the final weld. No pipe or fittings were replaced.

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Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] 8. Pneumatic [] Other [X] VT-2 exam was performed Pressure: 3600 psig Temp: ambient °F

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<b>9.</b> .	Remarks: None	
	(Applicable Manufacturer's Data Reports to be attached)	
,	(Applicable Manufacturer's Data Reports to be attached)         CERTIFICATE OF COMPLIANCE         e certify that the statements made in this report are correct and this <u>REPAIR</u> conforms to the asymptotic conformation of the ASME Code, Section XI. (repair or replacement)         med <u>Mutual</u> Supvg. ASME Codes Engineer <u>1-24</u> 1991         (Owner or Owner's Designee)         Title (Date)         CERTIFICATE OF INSPECTION         I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel         Inspectors and the State or Province of California, employed by <u>Arkwright Mutual Insurance Company</u> ( <u>Factory Mutual System</u> ) of Norwood, <u>Massachusetts have inspected the components described in this Owner's Report during the period from</u>	
We cer the rule Signed	(Applicable Manufacturer's Data Reports to be attached)         CERTIFICATE OF COMPLIANCE         We certify that the statements made in this report are correct and this <u>REPAIR</u> conforms he rules of the ASME Code, Section XI. (repair or replacement)         Supvg. ASME Codes Engineer 1-24 1997         (Owner or Owner's Designee)         Title (Date)         CERTIFICATE OF INSPECTION         I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vesse Inspectors and the State or Province of California, employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from <u>1/07/97</u> to <u>1/07/97</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising transmission is provided and belief.	conforms to
Insp (Fa Rep my ASI	e undersigned holding a valid commission issued by the National Board of Boiler and ectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Ins</u> torv <u>Mutual System</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components describes ort during the period from <u><math>//L//4/</math></u> to <u><math>//27/4/</math> and state to mowledge and belief, this repair or replacement has been performed in accordance with AE Code. By signing this certificate, neither the Inspector nor his employer makes any war polied economics the repair or replacement in this Report. Furthermore, neither the</u>	ed in this Owner's hat to the best of Section XI of the rranty, expressed Inspector nor his
fron	n or connected with this inspection.	
	pector's Signature (State or Province, National Board)	
Dat	January 27, 1991	

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	<u>OWNER'S REPORT OF REPAIR OR R</u>	EPLACEMENT
	As Required by the Provisions of ASME Code S	Section XI
		Sheet 1 of 1
1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	ASME MO: 90092221
		Unit: 1
2.	Plant: San Onofre Nuclear Generating Station	
	P.O. Box 128, San Clemente, CA 92674-0128	<b>RS:</b> 332-90
3.	Work Performed by: Southern California Edison	P&ID: 5178111 (F-9)
4:	System Identification: Reactor Coolant	

(a) Applicable Construction Code: ASA B31.1 1955 Edition, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" Pipe	R/A	N/A	R/A	S1-RCP-2020	N/A	Repaired	N/A

#### 7. Work Description:

5.

Several indentations in an area  $1 \frac{1}{2} \ge 1 \frac{3}{4} \ge 0.024$  deep were identified. NCR 90090172 was generated to address the condition. The indentations were removed by a hand file, the file marks were removed by polishing. An NDE PT Examination (1PT-072-90) was conducted with no relevant indications noted.

Reference: NCR 90090172

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: [psig Temp: [°F

(a) A soundation of the first sector function of the first sector for the first of the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the first sector for the fir

9.	Remarks:	None		
			(Applicable Manufacturer's Data Reports to be attached)	
	•			
			CERTIFICATE OF COMPLIANCE	
We ce rules Signe	of the ASME	Mar Secul	1 A SME Codes Engineer 2	$\underbrace{\text{conforms to the}}_{\text{ement}}$
			CERTIFICATE OF INSPECTION	
	spectors and f Factory Mutual eport during th by knowledge and SME Code, By	the State of <u>System</u> of ne period fr nd belief, th y signing the period the period fr the period fr the period fr the period fr the period fr the period fr the period fr period f	a valid commission issued by the National Board of Boil r Province of <u>California</u> , employed by <u>Arkwright Mutur</u> <u>Norwood</u> , <u>Massachusetts</u> have inspected the components d om <u><math>9/30/90</math></u> to <u><math>1/2/9/</math> and is repair or replacement has been performed in accordance is certificate, neither the Inspector nor his employer makes repair or replacement in this Report. Furthermore, neith ny manner for any personal injury or property damage or a is inspection.</u>	escribed in this Owner's state that to the best of e with Section XI of the any warranty, expressed er the Inspector nor his
-	Inspector's Sig	nature	Commissions <u>1862</u> California (State or Province, National Board)	
I	Date	ing 2	19 <u><i>91</i></u>	

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form. NIS-2

## OWNER'S REPORT OF REPAIR OR REPLACEMENT

		As Required by the Provisions of ASME Cod	le Section XI			
			Sheet 1	of 1		
1.	Owner: Southern Ca	lifornia Edison Company	ASME	MO:	90101857	
	2244 Walnut	Grove Ave., Rosemead, CA 91770	Unit:	1		
2.	Plant: San Onofre P.O. Box 12	Nuclear Generating Station 8, San Clemente, CA 92674-0128	RS:	342-90	)	
3.	Work Performed by:	Southern California Edison	P&ID:	517811	10 (D-2)	
4.	System Identification	n: Reactor Coolant				

- 5. (a) Applicable Construction Code: ASA B31.1 1955/E-Spec. 675268, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

#### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
3/4" 1500# Globe Valve	Rockwell Edwards	N/A	N/A	S1-RCP-303	N/A	Replaced	No
3/4" Globe Valve	Rockwell International	BL268	N/A	RIP-P-341-82	N/A	Replacement	No

#### 7. Work Description:

The existing valve required replacement. The replacement was reconciled to verify compliance with the original construction code requirements. A NDE/PT was conducted on the valve weld end preparation to welding. The valve was installed by welding. A VT-2 examination was performed during a System Inservice pressure test.

Reference: WR1-90-723, 1PT-83-90, CR-88-008

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2440 psig Temp: N/A °F

Kemarks:	None			•			
		(Applicable Man	ufacturer's Data	Reports to be	attached)		
We certify that the statements made in this report are correct and this repair or replacement)         rules of the ASME Code, Section XI.         Signed       Supvg. ASME Codes Engineer         Year       Year         (Owner or Owner's Designee)       Title         (Date)         CERTIFICATE OF INSPECTION         I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Year         Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Contract (Factory Mutual System) of Norwood. Massachusetts have inspected the components described in this Or Report during the period from 10/13/90 to 4/2/9/ and state that to the the my knowledge and belief, this repair or replacement has been performed in accordance with Section XI ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, exp							
(Applicable Manufacturer's Data Reports to be attached) <u>CERTIFICATE OF COMPLIANCE</u> We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI. (repair or replacement) Signed <u>Miniful</u> <u>Supve</u> . ASME Codes Engineer <u>4/12</u> 19 9) (Owner or Owner's Designee) Title (Date) <u>CERTIFICATE OF INSPECTION</u> I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessee Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> <u>(Factory Mutual System)</u> of <u>Norwood Massachusetts</u> have inspected the components described in this Owner' Report during the period from <u>10/13/20</u> to <u>412/9/</u> and state that to the best or my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expresses or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arisin from or connected with this inspection. Mathematical Insurance Commissions <u>1862</u> <u>California</u>							
		<u>CERTIFI(</u>	CATE OF	<u>COMPLI</u>	ANCE		
rtify that the st	atements m	ade in this rep	ort are corre	ect and this	replacer (repair or r	ment eplacement)	conforms to the
ling			Supvg. AS!	ME Codes I	• -		_1 <u>9</u> 91
Ovie	r or Owner			Title		(Date)	
		CERTIE	ICATE O	F INSPEC	TION		
spectors and the actory Mutual is eport during the y knowledge and SME Code. By implied, concern aployer shall be om or connected applied.	he State or <u>System</u> ) of <u>N</u> e period fro id belief, this signing this erning the re e liable in an ed with this	Norwood, Mass Morwood, Mass m	<u>achusetts</u> have <u>achusetts</u> have <u>accument has</u> ther the Insp mement in this any personal	c inspected o <u><u><u>4</u>/<u>2</u></u> been perfor ector nor his Report. F injury or pro</u>	the component the component med in according semployer nor withermore, operty damagentia	ents describe and state the ordance with a nakes any wa neither the ge or a loss o	d in this Owner's hat to the best of Section XI of the rranty, expressed Inspector nor his
	the undersigne spectors and t covre spectors and t actory Mutual eport during th y knowledge an SME Code. By implied, conce nployer shall be om or connected	the undersigned holding a spectors and the State or <u>Covner or Owner</u> (Owner or Owner the undersigned holding a spectors and the State or <u>Cactory Mutual System</u> ) of <u>N</u> eport during the period fro y knowledge and belief, this SME Code. By signing this implied, concerning the re- inployer shall be liable in an om or connected with this Mamman	<u>CERTIFIC</u> Trify that the statements made in this reproduction of the ASME Code, Section XI. <u>AMMAGENE</u> (Owner or Owner's Designee) (Owner or Owner's Designee) CERTIF the undersigned holding a valid commissis spectors and the State or Province of generations (Sectory Mutual System) of Norwood, Mass eport during the period from <u>10/13</u> y knowledge and belief, this repair or replace mployer shall be liable in any manner for a om or connected with this inspection. Mammane Commissis	CERTIFICATE OF rtify that the statements made in this report are correct of the ASME Code, Section XI. <u>AMAGUAL</u> Supvg. ASM (Owner or Owner's Designee) CERTIFICATE OF the undersigned holding a valid commission issued by spectors and the State or Province of <u>California</u> , en- <u>actory Mutual System</u> ) of Norwood. Massachusetts have eport during the period from <u>10/13/90</u> to y knowledge and belief, this repair or replacement has SME Code. By signing this certificate, neither the Inspir- implied, concerning the repair or replacement in this mployer shall be liable in any manner for any personal om or connected with this inspection. <u>Mathematicate</u> Commissions <u>186</u>	CERTIFICATE OF COMPLI rtify that the statements made in this report are correct and this of the ASME Code, Section XI. <u>Supve</u> . ASME Codes I <u>Supve</u> . ASME Codes I (Owner or Owner's Designee) Title CERTIFICATE OF INSPEC the undersigned holding a valid commission issued by the Nation spectors and the State or Province of <u>California</u> , employed by <u>actory Mutual System</u> ) of <u>Norwood Massachusetts</u> have inspected eport during the period from <u>10/13/90</u> to <u>4/22</u> y knowledge and belief, this repair or replacement has been perfor SME Code. By signing this certificate, neither the Inspector nor his implied, concerning the repair or replacement in this Report. F nployer shall be liable in any manner for any personal injury or pro- om or connected with this inspection. <u>Mathematicate</u> Commissions <u>1862</u> <u>California</u>	CERTIFICATE OF COMPLIANCE rtify that the statements made in this report are correct and this <u>replacer</u> of the ASME Code, Section XI. <u>(repair or replacer</u> ) <u>a M Multiple</u> Supve ASME Codes Engineer (Owner or Owner's Designee) Title CERTIFICATE OF INSPECTION the undersigned holding a valid commission issued by the National Board of spectors and the State or Province of <u>California</u> , employed by <u>Arkwright</u> <u>actory Mutual System</u> ) of <u>Norwood Massachusetts</u> have inspected the compone eport during the period from <u>10/13/90</u> to <u>4/2/9/</u> y knowledge and belief, this repair or replacement has been performed in accord SME Code. By signing this certificate, neither the Inspector nor his employer me implied, concerning the repair or replacement in this Report. Furthermore, nployer shall be liable in any manner for any personal injury or property dama om or connected with this inspection. <u>Mutual Mutual System</u> Commissions <u>1862</u> <u>California</u>	CERTIFICATE OF COMPLIANCE         trify that the statements made in this report are correct and this replacement (repair or replacement)         of the ASME Code, Section XI.         Supve ASME Codes Engineer         July         Supve ASME Codes Engineer         July         Owner's Designee)         Title (Date)         CERTIFICATE OF INSPECTION         the undersigned holding a valid commission issued by the National Board of Boiler and spectors and the State or Province of California, employed by Arkwright Mutual Insustance of Valuation of Norwood, Massachusetts have inspected the components describe         actory Mutual System) of Norwood, Massachusetts have inspected the components describe         eport during the period from $10/13/90$ to $4/20/91$ and state the         y knowledge and belief, this repair or replacement has been performed in accordance with SME Code. By signing this certificate, neither the Inspector nor his employer makes any was         SME Code. By signing this certificate, neither the Inspector nor his employer makes any was         implied, concerning the repair or replacement in this Report. Furthermore, neither the inspection and spector with this inspection.         Mutual System) of Commissions $1862$ California

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

			Sheet 1	. of 1
•	Owner: Southern Califo	ornia Edison Company rove Ave., Rosemead, CA 91770	ASME	MO: 90022755
		Tove Ave., Rosenead, Cri 71110	Unit:	1
2.		clear Generating Station San Clemente, CA 92674-0128	RS:	117-90
	Work Performed by:	Southern California Edison	P&ID:	5178110 (E-10)
	System Identification:	Reactor Coolant		

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10.1

- (a) Applicable Construction Code: Westinghouse Equipment Specification E-676044, Code Classified XI-1, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" Flow Control Valve	BS&B	70-71393	N/A	S1-RCP-FCV-1115A	N/A		No
Valve Stem Assembly	WICM	Ht. 77248-1	N/A	RIP-18-78 Stem - 347265 Pin - 313370 Inner Valve - 205804	N/A	Replacement	No
Seat Cage	WKM	Ht. 2879	N/A	RIP-18-79 Part# 348790	N/A	Replacement	· No

#### 7. Work Description:

The valve was overhauled to minimize seat leakage per NCR disposition. Replaced flow control and valve stem assembly consisting of stem, pin, inner valve, and seat cage. The replacements were verified as being in compliance with the original construction code.

Reference: NCR SO1-P-7315 and the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2400 psig Temp: N/A

8.

	(/	Applicable Manufacturer	's Data Reports to be attached)	)	
	(	CERTIFICATE	OF COMPLIANCE		
e certify that the es of the ASM	ne statements mad	XF.		or replacement)	
med	wner or Owner's		<u>ASME Codes Engineer</u> Title	$\frac{4/2}{(Date)}$	19_2/
(0	wher or Owners.	Designee)	1140	()	
Inspectors an (Factory Muth Report during my knowledge ASME Code.	d the State or P: <u>ual System</u> ) of <u>Nor</u> g the period from e and belief, this re By signing this cer	alid commission issu rovince of <u>Californi</u> rwood, Massachusett <u>5/30/90</u> epair or replacement rtificate, neither the	E OF INSPECTION ed by the National Board ia, employed by <u>Arkwrig</u> s have inspected the comp $\frac{1}{2}$ to <u>4/2/9/</u> thas been performed in ad Inspector nor his employe	onents described <u>and state th</u> <u>cordance with S</u> r makes any war	I in this Owner's at to the best of fection XI of the ranty, expressed nspector nor his
employer shall from or conn	ll be liable in any n ected with this ins	manner for any perso spection.	a this Report. Furthermo onal injury or property dar <u>362 California</u> or Province, National Bo	nage or a loss of	any kind arising
employer shal from or conn 	ll be liable in any n ected with this ins	manner for any perso spection. Commissions // (State	anal injury or property dan	nage or a loss of	any kind arising

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		As Required by the Provisions of ASME Cod	e Section XI			
			Sheet 1	of 1		
1.		fornia Edison Company	ASME	MO:	\$9070368	
	2244 Walnut (	Grove Ave., Rosemead, CA 91770	Unit:	1		
2.	Plant: San Onofre N P.O. Box 128,	uclear Generating Station San Clemente, CA 92674-0128	RS:	118-90	)	
3.	Work Performed by:	Southern California Edison	P&ID:	51781	10 (E-10)	
4.	System Identification:	Reactor Coolant		·		

2.14

- 5. (a) Applicable Construction Code: Westinghouse Equipment Specification E-676044, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

#### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Flow Control Valve	BS&B	70-71394	N/A	S1-RCP-FCV-1115B	N/A		No
Valve Stem Assembly	WKM	Bt. 77248-1	N/A	Stem - 347365 Pin - 313370 Inner Valve - 205804	N/A	Replacement	No
Seat Cage	WICH	Bt. 2579	N/A	Part No. 348790	N/A	Replacement	No

#### 7. Work Description:

Flow control valve parts consisting of stem pin, inner valve, and seat cage were replaced. The replacements were verified to be in compliance with the original construction code.

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8.

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2400 psig Temp: N/A

9. Remarks: None	
(Applicable Manufacturer's Data Reports to be attached)	
CERTIFICATE OF COMPLIANCE	
We certify that the statements made in this report are correct and this <u>replacement</u> conform	ms to the
rules of the ASME Code, Section XI.	
	,
Signed out out out	,
(Owner or Owner's Designee) Title (Date)	
CERTIFICATE OF INSPECTION	
Processes and the state of Design and Processes	Veccel
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance C</u>	ompany
(Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this ( (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this (	Owner's
Report during the period from $\sqrt{4/90}$ to $\sqrt{2}/21$ and state that to the	
my knowledge and belief, this repair or replacement has been performed in accordance with Section X	I of the
ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, ex or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector	nor his
employer shall be liable in any manner for any personal injury or property damage or a loss of any kind	1 arising
from or connected with this inspection.	
1 al ((a) f	
<u>Heward L. Hatten</u> Commissions <u>1574</u> <u>California</u> Inspector's Signature (State or Province, National Board)	
Date 4 19 91	
Date $12 14$ 19 11	

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in.

x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

·	NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACE</u> As Required by the Provisions of ASME Code	MENT Section XI
8,221		
1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	Traveler: ASME M.O.
2.	Plant: San Onofre Nuclear Generating Station P. O. Box 128, San Clemente, CA 92672	Unit: 1 MERS: 311-89
3.	Work Performed by: Southern California Edison	M.O.: 89060538 001
4.	System Identification: Reactor Coolant System (RCS)	P&ID: 5178100

- (a) Applicable Construction Code: ASME VIII, 1959 edition with addenda thru 1960
   Code Cases: 1270N and 1273N; reference Westinghouse spec. 569259
   Code Classified: XI-1
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, Summer 1978 Addenda, Code Case: none
- 6. Identification of Components Repaired or Replaced:

Name of <u>Component</u>	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year	Repaired.   Replaced, or Replacement	
Reactor Vessel	Combustion Engineering	61102/61201	14921	S1-RCS-C-1	  1965		yes
2 ea. Sockethead cap 3/8"-16 X 3 1/4". ASME SA 193 gr. B8	Al Tech.Spec. Steel Corp.			RSO-3171-88 ht≇ OA2047 trace "U-13"	   	  Replacement   	no

7. Work Description: Two pressure retaining jacking bolts on the upper conoseal of the #69 instrument port column were replaced. The replacement bolting was verified as meeting the requirements of the original part drawing (Westinghouse dwg. # 500B183) and then installed IAW procedure S01-I-3.8 and M.O. 89060538 001.

Reference: NCR's SO1-P-7257 & SO1-P-7263 March States and the

8. Test Hydr

5.

Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other: A VT-2 Examination was performed Pressure: 2085 psig Temp: 539 °F 9. Remarks: none

(Applicable Manufacturer's Data Reports to be attached) CERTIFICATE OF COMPLIANCE We certify that the statements made in this report are correct and this <u>Replacement</u> conforms to the rules of the ASME Code, Section XI. (repair or replacement) Signed (Supvg ASME Codes Engineer) 7/3/1989 (Owner or Owner's Designee) Title (Date) CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from  $\frac{29}{29}$  to  $\frac{27}{29}$  and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Commissions /<u>272Califernia</u> (State or Province, National Board) Inspector'

Date <u>\$ /1</u> 19<u>89</u>

Note:

Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at 

	As Required by the Provisions of ASME Code Section XI						
<b></b>		Sheet 1 of 1					
1.	Owner: Southern California Edison Company	ASME MO: 90012343					
	2244 Walnut Grove Ave., Rosemead, CA 91770	Unit: 1					
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 123, San Clemente, CA 92674-0128	RS: 241-90, Rev.1					
3.	Work Performed by: Southern California Edison	P&ID: 5178100 (G-9)					
4.	System Identification: Reactor Coolant	· · · ·					

- (a) Applicable Construction Code: Westinghouse E. Specification 675199 (original pump spec.);
   ASME III, NB, 1977 Edition, Winter 1977 Addenda (mandated Code for replacement case bolting), Code Classified XI-1, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Reactor Coolant Pump	Westinghouse	1-0149	N/A	S1-RCS-G-2C			No
Casing Stud, 3-1;" 8UN 2A X 34-1;", (24)	Westinghouse	(S/N's listed on Cert docs) Ht. T4106	N/A	RSO 2112-90 SA540, Gr B23 Class 4	N/A	Replacement	No
Casing Stud Nut, 3-4" 8UN 2B, (24)	Westinghouse	(S/N's listed on Cert docs) Ht. T4105	N/A	RSO 2112-90 SA540, Gr. B23 Class 4	N/A	Replacement	Ko

#### 7. Work Description:

5.

8.

Main Casing flange bolts were replaced in accordance with design change MMP 1-3615.00 SM. The replacement bolting was verified as meeting the Code requirements of the referenced design change. The design change upgraded the requirements for the replacement bolting to ASME III in addition to changing the material type. The design change reconciled the Code differences between the replacement bolting and the original bolting in accordance with ASME XI, IWA-7210. A VT-1 examination was performed on the replacements. The PSE requirements were satisfied by the performance of a VT-1 examination combined with the UT examination performed by the supplier (see supplier certification documents).

Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] VT-2 Examination Pressure: 2390 & 2085 psig Temp: 540 & ambient °F

•			
	· ·		(Applicable Manufacturer's Data Reports to be attached)
			CERTIFICATE OF COMPLIANCE
		otoments m	ade in this report are correct and this <u>replacement</u> conforms to the (repair or replacement)
cei es o	f the ASME C	Code, Section	ade in this report are contest and (repair or replacement)
	/()~ <b>\</b>	1h	9 Supvg. ASME Codes Engineer 6 MAY 19 91
ned	Owne	r or Owner'	
	•		
			CERTIFICATE OF INSPECTION
Ins <u>(Fa</u> Rej	pectors and th <u>ctory Mutual S</u> port during the	the State or System) of <u>Ne</u> period from	valid commission issued by the National Board of Boiler and Pressure Vessel Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> forwood, <u>Massachusetts</u> have inspected the components described in this Owner's m <u><math>\frac{8}{16}/90</math></u> to $\frac{4}{30}/91$ and state that to the best of repair or replacement has been performed in accordance with Section XI of the
AS or fro In	ME Code. By s implied, conce ployer shall be m br connecte	signing this c rning the rep liable in any d with this i $\sqrt{1+1}$	pair or replacement in this Report. Furthermore, neither the Inspector nor his y manner for any personal injury or property damage or a loss of any kind arising inspection.
AS or m fro In	ME Code. By s implied, conce ployer shall be m br connecte	signing this c rning the rep liable in any d with this i $\sqrt{1+1}$	pair or replacement in this Report. Furthermore, neither the Inspector nor his y manner for any personal injury or property damage or a loss of any kind arising inspection.
AS or m fro In	ME Code. By s implied, conce ployer shall be m br connecte	signing this c rning the rep liable in any d with this i $\sqrt{1+1}$	certificate, neither the Inspector nor his employer makes my warrenty, appeared pair or replacement in this Report. Furthermore, neither the Inspector nor his y manner for any personal injury or property damage or a loss of any kind arising inspection. <u>1574</u> California (State or Province, National Board)
AS or m fro In	ME Code. By s implied, conce ployer shall be m or connecte Spector's Signa ite <u>5/9</u>	signing this c rning the rej liable in any d with this i	certificate, neither the Inspector for his employer makes any warranty, appeared pair or replacement in this Report. Furthermore, neither the Inspector nor his y manner for any personal injury or property damage or a loss of any kind arising inspection. <u>1574</u> California (State or Province, National Board)

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	NIS-2	
OWNER'S REPORT	OF REPAIR OF	REPLACEMENT

As Required by the Provisions of ASME Code Section NI

			Sheet 1	1 10	
1.	Owner: Southern California l	Edison Company	ASME MO: 90110138		
	2244 Walnut Grove	Ave., Rosemead, CA 91770	Unit:	1	
2.	Plant: San Onofre Nuclear P.O. Box 128, San C	Generating Station lemente, CA 92674-0128	RS:	30()-9()	
3.	Work Performed by: Sou	thern California Edison	P&ID:	5178100 (C-3)	
4.	System Identification: Rea	actor Coolant			

- Applicable Construction Code: Westinghouse Equipment Spec. 675239, Code Classified XI-1, 5. (a) Code Cases: None
  - Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 (b) Addenda, Code Cases: None
- Identification of Components Repaired or Replaced: 6.

		1	· · · · · · · · · · · · · · · · · · ·			Repaired,	ASME Code
Name of	Name of Manufacturer	Manufacturer Serial No.	National Ecard No.	Other Identification	Yezr Built	Replaced, or Replacement	Stamped Yes/No
Component	MENUISCOUTEL			S1-RCS-TE-410C	N/A		No
3/4" Thermowell	Weed	2502	N/A	S1-RCS-1E-4100			1
	Instruments						<u> </u>
3/4" KPS Plug	Cylemp/Hub	Ht. 1G7203	N/A	RSO 3608-90	R/A	Replacement	No
	1						

#### 7. Work Description:

8.

The addressed thermowell was plugged. The plug was fabricated from material compatible with the original construction code requirements. The plug was installed and seal weld into the thermowell. A preweld and postweld NDE/PT was performed with no relevant indications noted.

Reference: MMP 1-3641.00SJ, WR1-90-082, 1PT-006-91, 1PT-007-91

Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2090 psig Temp: 545 °F 

9.	Remarks:	None	
		ئر)	Applicable Manufacturer's Data Reports to be attached)
We c rules Signe	of the ASME	tatements ma	Supvg. ASME Codes Engineer 27 5 1951
	nspectors and Factory Mutua Report during t my knowledge a ASME Code B	the State of <u>I System</u> ) of <u>No</u> he period from and belief, this y signing this c cerning the re- be liable in any cted with this i	CERTIFICATE OF INSPECTION valid commission issued by the National Board of Boiler and Pressure Vessel Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> orwood. <u>Massachusetts have inspected the components described in this Owner's</u> an <u>12/14/90</u> to <u>4/2/91</u> and state that to the best of repair or replacement has been performed in accordance with Section XI of the sertificate, neither the Inspector nor his employer makes any warranty, expressed pair or replacement in this Report. Furthermore, neither the Inspector nor his y manner for any personal injury or property damage or a loss of any kind arising inspection. <u>Commissions</u> <u>1574</u> <u>California</u> (State or Province, National Board)

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

As Required by the Provisions of ASME Code Section XI

	· · · · · · · · · · · · · · · · · · ·		Sheet 1	of 1	
1.	Owner: Southern Califo		ASME	MO:	88090530
		rove Ave., Rosemead, CA 91770	Unit:	1	
2.		clear Generating Station San Clemente, CA 92674-0128	RS:	380-88	
3.	Work Performed by:	Southern California Edison	P&ID:	5178130	) (B-2)
4.	System Identification:	Residual Heat Removal			

- Applicable Construction Code: Westinghouse E675198, Code Classified XI-1, Code Cases: 5. (a) None
  - Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 **(b)** Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
8" Gate Valve	Crane	N/A	N/A	S1-RER-MOV-813	N/A		No
Pipe Plug	H&D Steel	Ht. 98249	R/A	RSO 1601-90	N/A	Replacement	No

#### 7. Work Description:

8.

A design change was initiated to allow for the installation of Chesterton live load packing. This required the installation of an unthreaded plug to replace the packing gland leak-off line. The plug material (SA-479, TP316) was verified as being compatible with the installation and system requirements. The plug was machined to proper tolerances and installed by welding. A NDE(PT) examination was conducted on the weld area with no relevant indications noted. After installation a VT-2 examination was conducted at system operating pressure with no leakage noted.

Reference: PFC 1-88-047, FCN's S5320, S3995M, S4103M, and S4104M, DCN AB-2113, WR1-88-904

a series and a series of the series of the series of the series of the series of the series of the series of th Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 355 psig Temp: 142 °F

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9.	Remarks:	None	
	<u> </u>	<u> </u>	(Applicable Manufacturer's Data Reports to be attached)
			CERTIFICATE OF COMPLIANCE
We ce	tify that the sta f the ASME C	atements ma	ade in this report are correct and this <u>replacement</u> conforms to the (repair or replacement)
Signed	NM N	me	Supry, ASME Codes Engineer 30 Apr. (1991)
•	(Owner	r or Owner's	Designee) Title (Date)
			CERTIFICATE OF INSPECTION
Ins (Fa Re) my AS or em	pectors and th ctory Mutual S port during the knowledge and ME Code. By s mplied concer	e State or l ystem) of Nc period from l belief, this r igning this co ming the rep liable in any	valid commission issued by the National Board of Boiler and Pressure Vessel Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> prwood, <u>Massachusetts</u> have inspected the components described in this Owner's a <u>1116/89</u> to <u>4/30/91</u> and state that to the best of repair or replacement has been performed in accordance with Section XI of the ertificate, neither the Inspector nor his employer makes any warranty, expressed pair or replacement in this Report. Furthermore, neither the Inspector nor his manner for any personal injury or property damage or a loss of any kind arising aspection.
Ín	<u>Bla Care</u> spector's Signal	<u>psim</u> ture	Commissions <u>1862</u> California (State or Province, National Board)
Da	te April	1 30,	19 <u>9/</u>
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	NIS-2	
OWNER'S REPORT O	F REPAIR OR	REPLACEMENT

		As Required by the Provisions of ASME Cod	e Section XI			
			Sheet 1	ot 1		
1.	Owner: Southern Califo	ASME	88090531			
	2244 Walnut G	rove Ave., Rosemead, CA 91770	Unit:	1		
2.	Plant: San Onofre Nu P.O. Box 128, S	clear Generating Station San Clemente, CA 92674-0128	RS:	381-88		
3.	Work Performed by:	Southern California Edison	P&ID:	517813(	) (B-2)	
4.	System Identification:	Residual Heat Removal				

(a) Applicable Construction Code: Westinghouse E675198, Code Classified XI-1, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
8" Gate Valve	Crane	N/A	N/A	S1-RER-MOV-814	N/A		No
Plug	E&D Steel	Et. 98249	N/A	RSO 1601-90	N/A	Replacement	No

#### 7. Work Description:

5.

8.

A design change was initiated to allow for the installation of Chesterton live load packing. This required the installation of an unthreaded plug to replace the packing gland leak-off line. The plug material (SA-479, TP316) was verified as being compatible with the installation and system requirements. The plug was machined to proper tolerances and installed by welding. A NDE(PT) examination was conducted on the weld area with no relevant indications noted. After installation a VT-2 examination was conducted at system operating pressure with no leakage noted.

Reference: FCN S3996M, 5320M, S4103M and S4104M, WR1-88-905

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Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 355 psig Temp: 142 °F

9.	Remarks:	None	· · · ·
	<u></u>		(Applicable Manufacturer's Data Reports to be attached)
			CERTIFICATE OF COMPLIANCE
We ce	rtify that the sta	atements ma	ade in this report are correct and this <u>replacement</u> conforms to the (repair or replacement)
	f the ASME C	ode, Seculo	Supvg. ASME Codes Engineer 30 April 19-91
Signed		r or Owner's	
·		······································	
			CERTIFICATE OF INSPECTION
Ins (Fa	pectors and th ctory Mutual S	e State or vstem) of No	valid commission issued by the National Board of Boiler and Pressure Vessel Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> prwood <u>Massachusetts</u> have inspected the components described in this Owner's
Re	port during the	period from	a <u>11689</u> to <u>4630797</u> and state that to the best of
1 00	implied concer	ming the ret	ertificate, neither the Inspector nor his employer makes any warranty, expressed pair or replacement in this Report. Furthermore, neither the Inspector nor his
em fro	ployer shall be m or connected	liable in any 1 with this i	manner for any personal injury or property damage or a loss of any kind arising aspection.
	Ellon	inten	Commissions <u>1862 California</u>
	spector's Signa	fure	(State or Province, National Board)
		Λ	
Da	te <u>April</u>	30,	_19 <u>9/</u>
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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			As Required by the Provisions of ASME Co	de Section XI			
				Sheet 1	ot 1		
1.	Owner:	Southern Califo	ornia Edison Company	ASME	MO:	88090527	
		2244 Walnut G	rove Ave., Rosemead, CA 91770	Unit:	1		
2.	Plant:	San Onofre Nu P.O. Box 128, S	clear Generating Station San Clemente, CA 92674-0128	RS:	384-8	S Rev.1	
3.	Work I	Performed by:	Souțhern California Edison	P&ID:	51781	30 (C-11)	
4.	System	Identification:	Residual Heat Removal			-	

- (a) Applicable Construction Code: Westinghouse E675198, Code Classified XI-1, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
6" Gate Valve	Crane	N/A	N/A	S1-RER-MOV-833	N/A		No
Pipe Plug	H&D Steel	Bt. 98249	N/A	RSO 1601-90	N/A	Replacement	No

7. Work Description:

5.

8.

A design change was initiated to allow for the installation of Chesterton live load packing. This required the installation of an unthreaded plug to replace the packing gland leak-off line. The plug material (SA-479, TP316) was verified as being compatible with the installation and system requirements. The plug was machined to proper tolerances and installed by welding. A NDE(PT) examination was conducted on the weld area with no relevant indications noted. After installation a VT-2 examination was conducted at system operating pressure with no leakage noted.

Reference: PFC 1-88-047, FCN's S5320, S4104M, and S4372M, DCN AB-2113, WR1-88-908

กับแก่การกันมาขณฑีการขณฑิญหมดที่เหติ เสรียมเริ่มต่าม แต่ มีการต่องกำ 6 มา มากมาก กระการการสิทธิสตัวแต่ก็สารกรรมปฏิภูมิตรฐานการการที่เสียหมัดได้ มากระบบประมาณการการการก

Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 355 psig Temp: 142 °F

9.	Remarks:	None	
	· ·		(Applicable Manufacturer's Data Reports to be attached)
			CERTIFICATE OF COMPLIANCE
We ce rules o	rtify that the s	tatements m Code, Section	ade in this report are correct and this <u>replacement</u> conforms to the (repair or replacement)
Signed	In	er or Owner	Supvg. ASME Codes Engineer 30 Apr. (19_9/ S Designee) Title (Date)
	(Owne	er or Owner	s Designee)
			CERTIFICATE OF INSPECTION
Ins (Fa Re	pectors and the actory Mutual Sectory during the	he State or System) of <u>N</u> e period from	valid commission issued by the National Board of Boiler and Pressure Vessel Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> orwood, <u>Massachusetts</u> have inspected the components described in this Owner's $m - \frac{G}{G} = \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{20} + \frac{1}{2$
my AS or	knowledge and ME Code. By a implied, conce	d belief, this signing this c rning the re	repair or feplacement has been performed in accordance with Section XI of the certificate, neither the Inspector nor his employer makes any warranty, expressed pair or replacement in this Report. Furthermore, neither the Inspector nor his
em	ployer shall be m or connecte	liable in any	manner for any personal injury or property damage or a loss of any kind arising
			Commissions 1862 California
In	spector's Signa	ature	(State or Province, National Board)
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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				Sheet 1 of 1		
1.	Owner: Southern California			ASME MO: 90111481		
		2244 Walnut Gro	ve Ave., Rosemead, CA 91770	Unit: 1		
2.	Plant:		ear Generating Station 1 Clemente, CA 92674-0128	RS: 391-90 Revi.0		
3.	Work F	Performed by:	Southern California Edison	P&ID: 5178115 (D-7)		
4.	System	Identification:	Safety Injection			
5.	(a)	Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-1, Code Cases: None				
	<b>(b)</b>	Applicable Editio Addenda, Code (		irs or Replacements: 1977 Edition, S'78		

As Required by the Provisions of ASME Code Section XI

6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Piping System	N/A	N/A	N/A	S1-SIS-340	N/A	Replaced	No
Pipe Cap	Capitol	Bt. BK67	N/A	RSO 1895-84	N/A	Replacement	No

#### 7. Work Description:

A crack was found in the drain line from S1-SIS-340 due to over stress. The valve and most of the associated drain line will be removed and replaced by a cap. The replacement cap (SA-182 F304) was verified to be in compliance with the original construction code requirements and installed by welding.

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References: FCN S-5417M, NCR 90060045

8. Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other []

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Pressure: 1180 psig Temp: N/A

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- <del></del>	(Applicable Manufacturer's Data Reports to be attached)
	CERTIFICATE OF COMPLIANCE
certify that the states s of the ASME Code	ents made in this report are correct and this <u>replacement</u> conforms to the (repair or replacement)
ed ann	Supvg. ASME Codes Engineer 4/3 19.91
(Owner or	Owner's Designee) Title (Date)
	CERTIFICATE OF INSPECTION
Inspectors and the S Factory Mutual Syste Report during the per my knowledge and be ASME Code. By sign or implied, concernin employer shall be liab from or connected w	ling a valid commission issued by the National Board of Boiler and Pressure Vessel ate or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> a) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's od from $\underline{/2/27/90}$ to $\underline{-4/4/9/}$ and state that to the best of ef, this repair or replacement has been performed in accordance with Section XI of the g this certificate, neither the Inspector nor his employer makes any warranty, expressed the repair or replacement in this Report. Furthermore, neither the Inspector nor his e in any manner for any personal injury or property damage or a loss of any kind arising h this inspection.
Inspectors and the S Factory Mutual Syste Report during the per my knowledge and be ASME Code. By sign or implied, concernin employer shall be liab from or connected w	ling a valid commission issued by the National Board of Boiler and Pressure Vessel ate or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> a) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's od from $\underline{/2/27/90}$ to $\underline{4/4/9/}$ and state that to the best of ef, this repair or replacement has been performed in accordance with Section XI of the g this certificate, neither the Inspector nor his employer makes any warranty, expressed the repair or replacement in this Report. Furthermore, neither the Inspector nor his e in any manner for any personal injury or property damage or a loss of any kind arising h this inspection. <u>Mathefact</u> Commissions <u>18/62</u> California (State or Province, National Board)

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	As Required by the Provisions of ASME Code Section XI Sheet 1 of 1								
1	Owner: Southern Califor	nia Edison Company	ASME	90080760001					
1.	2244 Walnut Gro	ove Ave., Rosemead, CA 91770	Unit:	1					
2.	Plant: San Onofre Nuc P.O. Box 12S, S	lear Generating Station an Clemente, CA 92674-0128	RS:	287-90	)				
3.	Work Performed by:	Southern California Edison	P&ID:	51781(	05				
4.	System Identification:	Reactor Coolant System							

- Applicable Construction Code: Westinghouse Equipment Specification 675197, Code Classified (a) XI-1, Code Cases: Nonc
  - Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 **(b)** Addenda, Code Cases: None
- Identification of Components Repaired or Replaced: 6.

Name of Component	Name of Manufacturer	Manufacturer Serial No. 47469-532	National Board No. N/A	Other Identification 024-18820	Year Built	Repaired, Replaced, or Replacement Repaired	ASME Code Stamped Yes/No Yes (NV)	
3" x 6" Pressurizer Safety Valve	Crosby Valve & Gage	47469-532	N/A	(47469-M1-532)			<u> </u>	ļ

#### 7. Work Description:

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5.

During receiving inspection of the valve (on its return from the vendor facility) the presence of several linear indications were identified (visually) on the valve's outlet flange. The indications are documented on NCR's 90080051 and 90080235. The indications were removed by grinding as documented on ASME MO 90080760001. A PT examination was performed to verify complete removal of all three indications. Due to the resultant depth and location of the repair cavities no weld repairs were required.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] 8. Pneumatic [] Other [X]

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Pressure: N/A psig Temp: N/A

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A system pressure was performed during the installation.

(Applicable Manu	ufacturer's Data Reports to be atta	iched)
CERTIFIC	CATE OF COMPLIAN	<u>CE</u>
We certify that the statements made in this reported rules of the ASME Code, Section XI.	ort are correct and this (rep	repair conforms to the pair or replacement)
Signed der Mindele	Supyg. ASME Codes Engin	neer 6/3 199;
(Owner or Owner's Designee)	Title	(Date)
CERTIFIC I, the undersigned holding a valid commission Inspectors and the State or Province of <u>Ga</u> (Factory Mutual System) of Norwood, Massaar Report during the period from <u>3/30/0</u> my knowledge and belief, this repair or replace ASME Code. By signing this certificate, neith or implied, concerning the repair or replace employer shall be liable in any manner for an from or connected with this inspection. <u>Management</u> Commission Inspector's Signature Date <u>4000000000000000000000000000000000000</u>	<u>alifornia</u> , employed by <u>Ark</u> <u>chusetts</u> have inspected the con- <u>GO</u> to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construction) to <u>G</u> (Construct	and state that to the best of in accordance with Section XI of the loyer makes any warranty, expressed rmore, neither the Inspector nor his damage or a loss of any kind arising

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

9.

**Remarks:** 

		As Required by the Provisions of ASME Code	Sheet 1	l of 1
1.	Owner: Southern Calif 2244 Walnut G	ornia Edison Company rove Ave., Rosemead, CA 91770	ASME	MO: 90102861
			Unit:	1
2.		iclear Generating Station San Clemente, CA 92674-0128	RS:	361-90
3.	Work Performed by:	Southern California Edison	P&ID:	5178111 (E-10)
4.	System Identification:	Reactor Coolant Pump Seal Water		

.

 (a) Applicable Construction Code: ASA B31.1, 1980 Edition, Code Classified XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

6. Identification of Components Repaired or Replaced:

.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
3/8" Pipe Support	N/A	N/A	N/A	S1-01-2055-H00A	N/A		No
3/8" Load Pin .	Pacific Scientific	<b>Bt. N2826</b>	N/A	RSO 1592-88 SA-564, Gr. 630	N/A	Replacement	No

7. Work Description:

5.

8.

The load pin connecting the sway strut to the pipe clamp was lost while this support was removed for the RCP "C" motor work. The replacement load pin was verified as meeting the requirements of the original construction code and installed. A VT-3 examination was performed on the support assembly with satisfactory results.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: N/A psig Temp: N/A

9.	Remarks:	None
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(Applicable Manufacturer's Data Reports to be attached)

#### CERTIFICATE OF COMPLIANCE

 We certify that the statements made in this report are correct and this replacement
 replacement
 conforms to the

 rules of the ASME Code, Section XI.
 (repair or replacement)
 19 9 (

 Signed
 Supvg. ASME Codes Engineer [] March
 19 9 (

Title

(Date)

(Owner or Owner's Designee)

# CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u>, employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from 11/4/90 to 3/12/9/ and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Lend Commissions <u>1864</u> California (State or Province, National Board) etor's Signature

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		OF REPAIR OR REPLACEMENT	•
	As Required by the	he Provisions of ASME Code Section XI Sheet 1 of 1	
1.	Owner: Southern California Edison Com	mpany ASME MO: 90091551	
	2244 Walnut Grove Ave., Rosem	Unit: 1	
2.	Plant: San Onofre Nuclear Generating P.O. Box 128, San Clemente, CA	g Station 2A 92674-0128 RS: 333-90	
3.	Work Performed by: Southern Califor	fornia Edison P&ID: 5178311 (F-2)	
4.	System Identification: Component Coc	ooling Water	

(a) Applicable Construction Code: ANSI/ASME B31.1 - 1980, AWS D1.1 - 1980, Code Classified XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Pipe Support	N/A	N/A	N/A	S1-01-3073-E-315	N/A	Repaired	No

#### 7. Work Description:

5.

To facilitate the replacement of flow indicator S1-CCW-FIC-607A, the pipe support was removed and reinstalled in accordance with weld record WR1-90-700.

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8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: N/A psig Temp: N/A

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	Remarks:	None	·					
		(	Applicable Ma	anufacturer's Dat	a Reports to	be attached)		
			CERTIFI	CATE OF	COMPL	<u>JANCE</u>		
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gned	_ U	Minh	le_	Supyg. AS	ME Codes	Engineer	<u>1-24</u> (Date)	19 <u><i>7</i></u> /
-	(Owne	r or Owner's	Designee)		Title		(Date)	
								<u></u>
			CERTIF	ICATE O	FINSPE	CTION		
<b>T</b> .	1	Laiding o					f Boiler and P	ressure Vessel
1		- State of B	Province of	California, et	nniovea Di	Arkwright	Withing mour	
De	and during the	period from	i illa	r o t c		190	and state that	in this Owner's t to the best of
A C	ME Code Bys	ioning this ce	rtificate nei	ther the Inspe	ctor nor hi	s employer n	lakes any warr	ection XI of the anty, expressed
~~	implied concer	ming the ren	air or replac	ement in this	Report. F	urthermore.	neither the in	spector nor his any kind arising
fro	m or connected	l with this ins	spection.					
-4	spector's Signa	acker_	_ Commissio	ons <u>/8/62</u> (State or P	2 Califo	mia tional Board	ł)	
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 x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

OWNER'S REPORT OF REPAIR OR	REPLACEMEN	T	
As Required by the Provisions of ASME Cod	le Section XI		
	Sheet 1 of 1		
Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	ASME MO:	90091553	

NIS-2

Unit: 1 2. Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128 RS: 335-90

Southern California Edison

3. Work Performed by:

Component Cooling Water System Identification: 4.

Applicable Construction Code: ANSI/ASME B31.1-1980/AWS D1.1-1980, Code Classified XI-2, (a) Code Cases: None

**P&ID:** 5178311 (G-2)

- Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 (b) Addenda, Code Cases: None
- Identification of Components Repaired or Replaced: 6.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Pipe Supports	N/A	N/A	N/A	S1-01-3073-H-325	N/A	Repaired	No

#### 7. Work Description:

1.

5.

To facilitate the replacement of flow indicator S1-CCW-FIC-607C, the pipe support was removed and reinstalled in accordance with weld record WR1-90-702.

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other []

Pressure: N/A psig Temp: N/A °F

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CERTIEI	CATE OF COMPLIA	NCE	
	CALL OF COMPLET		
We certify that the statements made in this rep	port are correct and this		conforms to the
rules of the ASME Code, Section XI.	1)	epair or replacement)	
Signed_ Al Meilele	Supvg. ASME Codes En	vineer 1-24	19 <i>9</i> /
(Owner or Owner's Designee)	Title	(Date)	· ·
	•		
CERTIF	ICATE OF INSPECT	ION	
I, the undersigned holding a valid commission Inspectors and the State or Province of <u>(Factory Mutual System)</u> of Norwood, Massa Report during the period from <u>1/4/90</u> my knowledge and belief, this repair or repla	<u>California</u> , employed by <u>A</u> <u>achusetts</u> have inspected the <u>to</u> <u>1-14-7</u> acement has been performe	components describe <u>y</u> and state th <u>y</u> and state th <u>y</u> and state th	rance Company d in this Owner's at to the best of
ASME Code. By signing this certificate, neith or implied, concerning the repair or replace employer shall be liable in any manner for an from or connected with this inspection.	ment in this Report. Furth ay personal injury or proper	hermore, neither the I ty damage or a loss of	ranty, expressed nspector nor his
or implied, concerning the repair or replace employer shall be liable in any manner for an from or connected with this inspection.	ment in this Report. Furth	nermore, neither the I ty damage or a loss of	ranty, expressed nspector nor his

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9. -

Remarks:

None

		As Required by the Provisions of ASME Cod	e Section XI Sheet 1	of 1
			ASME	
•	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770		ASIVIL	MO: 90101782
			Unit:	1
2.	Plant: San Onofre Nu P.O. Box 128, S	clear Generating Station San Clemente, CA 92674-0128	RS:	GEN-004
	Work Performed by:	Southern California Edison	P&ID:	5178205
۱.	System Identification:	Feedwater		

- Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 **(b)** Addenda, Code Cases: None
- Identification of Components Repaired or Replaced: 6.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber PSA 10-6	Pacific Scientific	16866	N/A	S1-05-0318-H-014		Replaced	
Mechanical Snubber PSA 10-6	Pacific Scientific	2135	N/A	RSO 4190-84	1977	Replacement	Yes

#### 7. Work Description:

8.

None

The mechanical snubber was replaced as a preventative maintenance action. The replacement snubber was verified as meeting the requirements of the original construction code, as documented in code reconciliation CR-90-002. Prior to installation, the snubber was functionally tested and visually inspected (VT-4). After installation, the snubber attachment points were visually inspected (VT-3).

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] VT-4 & VT-3 Pressure: N/A psig Temp: N/A

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9.	Remarks:	None	
		(Applicable Manufacturer's Data Reports to be attached)	
		CERTIFICATE OF COMPLIANCE	
We ce	rtify that the sta of the ASME Co	nents made in this report are correct and this <u>replacement</u> conforms to a conform to replacement)	the
Signe	AN NA	Owner's Designee) Title (Date)	
	····	CERTIFICATE OF INSPECTION	
In (F Ro my AS or	spectors and the actory Mutual Sy port during the knowledge and SME Code. By so implied, concer inployer shall be loom or connected	blding a valid commission issued by the National Board of Boiler and Pressure Vess state or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compar- im) of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner riod from <math>10/17/90</math> to <math>2/14/91</math> and state that to the best lief, this repair or replacement has been performed in accordance with Section XI of the ing this certificate, neither the Inspector nor his employer makes any warranty, expresses g the repair or replacement in this Report. Furthermore, neither the Inspector nor his is in any manner for any personal injury or property damage or a loss of any kind arisin ith this inspection.</u>	r's of he ed_ nis
	specior's Signal	Commissions <u>1864</u> <u>California</u> (State or Province, National Board)	
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### ASME SECTION XI ABSTRACT OWNER'S SUMMARY OF REPAIR OR REPLACEMENT

1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead,		A	ASME	MO:	90082392	
2.	Plant: San Onofre Nuclear Generating Stati P.O. Box 128, San Clemente, CA 92	ion		Unit: RS:	1 322-90		
3.	Work Performed by: Southern California		I	P&ID:	5178115	;	•
4.	System Identification: Safety Injection						
5.	Plant Tag No.: S1-05-6002-H-008	Serial No.:	16864				
6.	Component: Mechanical Snubber	Name:	Pacific So	cientific	e Siz	e: PSA	A 10-6
7.	Code: ANSI B31.1, 1980 Edition	Class:	XI-2				
	·						

8. Purpose (Statement of Problem):

The existing snubber is being replaced as a result of failing the functional testing.

9. Narrative Summary (Brief Description of Work Performed):

The snubber was replaced with an in-kind replacement, verified to meet the requirements of the original construction code. Satisfactory VT-1, 3 and 4 examinations were conducted on the snubber and connections.

Reference: NCR 90080246

#### 10. Material Used:

Mechanical Snubber

Prepared By: <u>K.L. Collins</u> D

Date: February 21, 1991

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	As Required by the Provisions of ASME Code	Section XI
		Sheet 1 of 1
1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	ASME MO: 90082392
		Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	<b>RS:</b> 322-90
3.	Work Performed by: Southern California Edison	<b>P&amp;ID:</b> 5178115
4.	System Identification: Safety Injection	

- (a) Applicable Construction Code: ANSI B31.1, 1980 Edition, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber PSA 10-6	Pacific Scientific	16864	N/A	S1-05-6002-H-008	N/A	Replaced	No
Mechanical Snubber PSA 10-6	Pacific Scientific	15004	N/A	RS02-P-159-84	1983	Replacement	No

#### 7. Work Description:

5.

The existing snubber was replaced as a result of failing the functional testing. The snubber was replaced with an in-kind replacement, verified to meet the requirements of the original construction code. Satisfactory VT-1, 3 and 4 examinations were conducted on the snubber and connections.

Reference: NCR 90080246

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Constant and the Balance of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the sta

9.	Remarks:	None	
		(Applicable Manufacturer's Data Reports to be attached)	
	•		
		CERTIFICATE OF COMPLIANCE	
We cer rules o	tify that the sta f the ASME C	ments made in this report are correct and this <u>replacement</u> e. Section XI. (repair or rep	ent conforms to the blacement)
Signed	Mar IV	Supvg. ASME Codes Engineer // /	
0.5000		r Owner's Designee) Title	(Date)
	· · · · · · · · · · · · · · · · · · ·	CERTIFICATE OF INSPECTION	
Insj (Fa Rep my ASI or i em	pectors and the ctory Mutual Sy- port during the knowledge and ME Code. By si mplied, concern ployer shall be 1	olding a valid commission issued by the National Board of H State or Province of <u>California</u> , employed by <u>Arkwright M</u> em) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the component riod from <u>10/15/90</u> to <u>3/12/91</u> a slief, this repair or replacement has been performed in accord- ing this certificate, neither the Inspector nor his employer mak- g the repair or replacement in this Report. Furthermore, ne- ole in any manner for any personal injury or property damage of ith this inspection.	utual Insurance Company ts described in this Owner's and state that to the best of ance with Section XI of the tes any warranty, expressed wither the Inspector nor his
	Dector's Signat	Commissions <u>1862</u> <u>California</u> (State or Province, National Board)	
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Dat	e Marc	12, 19 91	
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

As Required by the Provisions of ASME Code Section XI							
		Sheet 1 of 1					
1. (	Owner: Southern California Edison Company	ASME MO: 90082393					
	2244 Walnut Grove Ave., Rosemead, CA 917	Unit: 1					
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	<b>RS:</b> GEN-004					
3.	Work Performed by: Southern California Edison	<b>P&amp;ID:</b> 5178115					

4. System Identification: Safety Injection

- 5. (a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber PSA 10-6	Pacific Scientific	15253	N/A	SI-05-6002-H-024		Replaced	
Mechanical Snubber PSA 10-6	Pacific Scientific	390	N/A .	RSO 4190-84	N/A	Replacement	No

7. Work Description:

The mechanical snubber was replaced as a preventative maintenance action. The replacement snubber was verified as meeting the requirements of the original construction code, as documented in code reconciliation CR-90-002. Prior to installation, the snubber was functionally tested and visually inspected (VT-4). After installation, the support assembly was visually inspected (VT-3).

Reference: NCR 90110026

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] VT-4 & VT-3 Pressure: N/A psig Temp: N/A

	(Applicable Manufacturer's Data Reports to be attached)
	CERTIFICATE OF COMPLIANCE
e certi les of	fy that the statements made in this report are correct and this <u>replacement</u> conforms to th the ASME Code, Section XI. (repair or replacement)
med_	Angle Supver ASME Codes Engineer 13 Feb 1991 (Oumer or Owner's Designee) Title (Date)
	(Owner or Owner's Designee) Title (Date)
•	
	CERTIFICATE OF INSPECTION
Inspe (Fact	e undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel actors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u>
Inspe (Fact	e undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel ectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> orv <u>Mutual System</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's ort during the period from (0/23/90) to 2/15/9/ and state that to the best of
Inspe (Fact Repo	c undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel ectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> orv Mutual System) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's ort during the period from $10/23/90$ to $21/5/91$ and state that to the best of nowledge and belief this repair or replacement has been performed in accordance with Section XI of the
Inspe (Fact Repo my k ASM	e undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel ectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> orv Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's ort during the period from $10/23/90$ to $2/15/91$ and state that to the best of nowledge and belief, this repair or replacement has been performed in accordance with Section XI of the E Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed uplied concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his
Inspe (Fact Repo my k ASM or in empl	e undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel ectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> orv Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's ort during the period from $10/23/90$ to $21/5/91$ and state that to the best of nowledge and belief, this repair or replacement has been performed in accordance with Section XI of the E Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed uplied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his over shall be liable in any manner for any personal injury or property damage or a loss of any kind arising
Inspe (Fact Repo my k ASM or in empl	e undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel ectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> orv Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's ort during the period from $10/23/90$ to $2/15/91$ and state that to the best of nowledge and belief, this repair or replacement has been performed in accordance with Section XI of the E Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed uplied concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his
Inspe (Fact Repo my k ASM or in empl from	e undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel ectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> orv Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's ort during the period from <u>10/23/90</u> to <u>2/15/9/</u> and state that to the best of nowledge and belief, this repair or replacement has been performed in accordance with Section XI of the E Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed uplied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his over shall be liable in any manner for any personal injury or property damage or a loss of any kind arising or connected with this inspection.
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Inspe (Fact Repo my k ASM or in empl from Insp	e undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel ectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> orv <u>Mutual System</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's ort during the period from <u>10/23/90</u> to <u>2/15/91</u> and state that to the best of nowledge and belief, this repair or replacement has been performed in accordance with Section XI of the E Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed aplied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his over shall be liable in any manner for any personal injury or property damage or a loss of any kind arising or connected with this inspection. <u>Massactuation</u> Commissions <u>IBCP</u> California ector's Signardre (State or Province, National Board)
Inspe (Fact Repo my k ASM or in empl from Insp	e undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel ectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> orv Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's ort during the period from <u>10/23/90</u> to <u>2/15/9/</u> and state that to the best of nowledge and belief, this repair or replacement has been performed in accordance with Section XI of the E Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed uplied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his over shall be liable in any manner for any personal injury or property damage or a loss of any kind arising or connected with this inspection.

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

# As Required by the Provisions of ASME Code Section XI Sheet 1 of 1 Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770 Unit: 1

 Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128 RS: GEN-004, Rev.0
 Work Performed by: Southern California Edison P&ID: 5178205
 System Identification: Safety Injection

- 5. (a) Applicable Construction Code: ANSI B31.1, 1980 Edition, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber PSA 10-6	Pacific Snubber	16854	N/A	S1-05-6004-H-012	N/A		No
Load Stud (1)	Republic Steel	N-2618C Ht. 8654092	N/A	RSO 0237-86 SA-564, Gr 630	N/A	Replacement	No

### 7. Work Description:

The load stud was damaged while removing the snubber to perform a functional test. The replacement load stud was verified as meeting the requirements of the original construction code. A VT-1 was performed on the load stud. The snubber was functionally tested and visually inspected (VT-4). After installation the support assembly was visually inspected (VT-3).

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other []

Pressure: N/A psig Temp: N/A

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**Remarks:** None (Applicable Manufacturer's Data Reports to be attached) CERTIFICATE OF COMPLIANCE We certify that the statements made in this report are correct and this <u>replacement</u> \_ conforms to the (repair or replacement) rules of the ASME Code, Section XI. Supry, ASME Codes Engineer 19 March 19 9 Signed Title (Owner or Owner's Designee) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from 10/2.6/90 to 03/2.0/91 and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \_\_\_\_Commissions \_\_\_\_\_California\_\_\_\_\_ (State or Province, National Board) Inspector's Signature March 20 19 91

Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. Note: x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

9.

			Sheet 1 of 1
	Owner: Southern Califo	ornia Edison Company	ASME MO: 90101818
	2244 Walnut G	rove Avc., Rosemead, CA 91770	Unit: 1
,	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128		RS: GEN-004
	Work Performed by:	Southern California Edison	P&ID: 5178205
	System Identification:	Feedwater	

(a) Applicable Construction Code: ANSI B31.1, 1980 Edition, Code Classified XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

# 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber PSA 10-6	Pacific Scientific	2255	N/A	S1-06-0015-H-011	N/A		No
Load Stud (1)	Republic Steel	N-2518C Et. 8654092	N/A	RSO 0237-86 SA-564, Gr 630 Mat. Spec. 17-48H	N/A	Replacement	No

### 7. Work Description:

The load stud was damaged while removing the snubber to perform a functional test. The replacement load stud was verified as meeting the requirements of the original construction code. A VT-1 was performed on the load stud. The snubber was functionally tested and visually inspected (VT-4). After installation the support assembly was visually inspected (VT-3).

8.

5.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: N/A psig Temp: N/A

9. F	Remarks:	None					
	<u></u>	(*	pplicable Ma	nufacturer's Da	a Reports to be a	attached)	
		<u>(</u>	CERTIFI	<u>CATE OF</u>	COMPLIA	NCE	
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Signed	(Owner	or Owner's	Designee)	Supvg. AS	<u>ME Codes En</u> Title	gineer	15 March 1991 (Date)
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<b></b>							<u> </u>
			CERTIF	ICATE O	F INSPECT	TION	. · ·
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Insu	ector's Signat	<del>carland</del> wre	Commissio	$\frac{860}{\text{(State or F})}$	California Province, Natio	a onal Boa	rd)
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Date.	March	2 16	19 91	•			-
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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		As Required by the Provisions of ASME Cod	e Section XI		
••••••	•		Sheet	1 of 1	
1.	Owner: Southern Calif	ornia Edison Company	ASME MO: 90101807		
	2244 Walnut Grove Ave., Rosemead, CA 91770		Unit:	1	
2.	Plant: San Onofre Nu P.O. Box 128,	iclear Generating Station San Clemente, CA 92674-0128	RS:	GEN-004	
3.	Work Performed by:	Southern California Edison	P&ID:	5178205	
4.	System Identification:	Feedwater			

5. (a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber PSA 10-6	Pacific Scientific	14960	N/A	S1-06-0317-H-016		Replaced	
Mechanical Snubber PSA 10-6	Pacific Scientific	15270	N/A	RSO 2-P-358-84	1983	Replacement	No

### 7. Work Description:

8.

The mechanical snubber was replaced as a result of failing Technical Specification 4.14.C functional testing. The replacement was verified as meeting the requirements of the original construction code, as documented on code reconciliation CR-90-002. Prior to installation the snubber was functionally tested and visually inspected (VT-4). After installation the support assembly was visually inspected (VT-3).

### Reference: NCR 90100042

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] VT-4 & VT-3

Pressure: N/A psig Temp: N/A

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(Applicable Manufacturer's Data Reports to be attached)

CERTIFICATE OF COMPLIANCE We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the (repair or replacement) rules of the ASME Code, Section XI. Supvg. ASME Codes Engineer 21 Feb Title (Date) Signed A (Owner or Owner's Designee) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from <u>10/24/90</u> to <u>2/15/91</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. Commissions 1862 California OMPAN (State or Province, National Board) Inspector's Signature 1. 1911 15, 1991 Date 7 الموجوع الدين الي المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المر المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع المراجع

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

9.

Remarks:

None

		NIS-2		
OWNER'S REPORT	OF	REPAIR	OR	REPLACEMENT

		As Required by the Provisions of ASME Coo	le Section XI	
Ģ			Sheet	1 of 1
1.	Owner: Southern Califo	ornia Edison Company rove Ave., Rosemead, CA 91770	ASME	MO: 90101809
	2244 Wallut O	Tove Ave., Rosemeau, CA 91770	Unit:	1
2.		clear Generating Station San Clemente, CA 92674-0128	RS:	GEN-004
3.	Work Performed by:	Southern California Edison	P&ID:	5178205
4.	System Identification:	Feedwater		

- (a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber PSA 10-6	Pacific Scientific	15256	N/A	S1-06-0317-H-017		Replaced	
Mechanical Snubber PSA 10-6	Pacific Scientific	11594	N/A	RIP-F-22-83 Code Case 1644-6	1981	Replacement	Yes

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### 7. Work Description:

5.

8.

The mechanical snubber was replaced as a result of failing Technical Specification 4.14.C functional testing. The replacement was verified as meeting the requirements of the original construction code, as documented in code reconciliation CR-90-002. Prior to installation, the snubber was functionally tested and visually inspected (VT-4). After installation, the support assembly was visually inspected (VT-3).

Reference: NCR 90100063

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] VT-4 & VT-3 Pressure: N/A psig Temp: N/A

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9.	Remarks: None	
	(Applicable Manufacturer's Data Reports to be attached)	
	(Applicable Manufacturer's Data Reports to be attached) CERTIFICATE OF COMPLIANCE certify that the statements made in this report are correct and this <u>replacement</u> conforms to the s of the SIME Code, Section XI. (repair or replacement) ed <u>Supve</u> , ASME Codes Engineer 13 feb 19 °G (Owner or Owner's Designee) Title (Date) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> <u>Factory Mutual System</u> ) of <u>Norwood</u> , <u>Massachusetts have inspected the components described in this Owner's Report during the period from <u>OUDO</u> to <u>2000</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed for implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his semployer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.</u>	
	<u>CERTIFICATE OF COMPLIANCE</u> e certify that the statements made in this report are correct and this <u>replacement</u> conforms to the les of the ASME Code, Section XI. (repair or replacement) gned <u>Supvg. ASME Codes Engineer /3 Feb</u> 19 <u>9</u> (Owner or Owner's Designee) Title (Date)	
	CERTIFICATE OF COMPLIANCE	
We cer	rtify that the statements made in this report are correct and this <u>replacement</u> conf of the ASME Code, Section XI. (repair or replacement)	forms to the
	() A Nie a south and Engineer Beek 19	94
(Applicable Manufacturer's Data Reports to be attached)         (Applicable Manufacturer's Data Reports to be attached)         CERTIFICATE OF COMPLIANCE         We certify that the statements made in this report are correct and this replacement/ rules of the ASME Code, Section XI.         Supvg. ASME Codes Engineer /3 Feb (Owner or Owner's Designee)         Title (Date)         CERTIFICATE OF INSPECTION         I, the undersigned holding a valid commission issued by the National Board of Boiler and Inspectors and the State or Province of California, employed by Arkwright Mutual Insu (Factory Mutual System) of Norwood, Massachusetts have inspected the components describe Report during the period from /0/26/90 to 2/25/90 and state th my knowledge and belief, this repar or replacement has been performed in accordance with S ASME Code. By signing this certificate, neither the Inspector nor his employer makes any way or implied, concerning the repair or replacement in this Report. Furthermore, neither the I employer shall be liable in any manner for any personal injury or property damage or a loss of from or connegted with this inspection.         Mathematication of Signature         (State or Province, National Board)         Date Fuburary 15, 1921		
	(Owner of Owner's Designee)	
	CERTIFICATE OF INSPECTION	
Insj (Fa Rep my ASI or i em	pectors and the State or Province of <u>California</u> , employed by <u>Auxingal Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Territorian Frictum Terr</u>	the best of n XI of the c, expressed ctor nor his
In	ASpector's Signature (State or Province, National Board)	
Da	ate <u>Floriany 15, 1991</u>	
Da	ate <u>Flbrusary 15, 1991</u>	

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

		Sheet 1 of 1
Owner: Southern Califo		ASME MO: 91010509
2244 Walnut G	rove Ave., Rosemead, CA 91770	Unit: 1
Plant: San Onofre Nu P.O. Box 128, S	clear Generating Station San Clemente, CA 92674-0128	RS: GEN-004, 031-91
Work Performed by:	Southern California Edison	P&ID: 5178115 (G-4)
System Identification:	Safety Injection	•

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

### 6. Identification of Components Repaired or Replaced:

None

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber PSA 10	Pacific Scientific	569	N/A	S1-06-6003-H-007	N/A		No
Bearing Assembly	Pacific Scientific	Part# 1801483-01	N/A	RSO 1303-85	N/A	Replacement	No

### 7. Work Description:

Upon disassembly, the bearing assembly was found damaged and required replacement. The replacement bearing assembly was verified to be in compliance with the original construction code requirements. Prior to installation the snubber was functionally tested and visually inspected (VT-4). After installation the support assembly was visually inspected (VT-3).

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] VT-4 & VT-3

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9.	Remarks:	None				
	(	(App	licable Manufacturer's Data 1	Reports to be attached)		
		CE	ERTIFICATE OF C	COMPLIANCE		
We co	ertify that the store of the ASME (	tatements made,i Code, Section XI.	in this report are correc	t and this <u>replace</u> (repair or )	ment replacement)	conforms to the
Signe	All	Thille		E Codes Engineer	4/3	_19_9/
0.640		r or Owner's De		Title	(Date)	
In: (F Re my AS or en fro	spectors and the actory Mutual S eport during the knowledge and SME Code. By a implied, conce aployer shall be om or connecte	d holding a valid he State or Provi <u>System</u> ) of <u>Norwor</u> e period from d belief, this repair signing this certifi- rning the repair of liable in any man d with this inspect	ommissions <u>186</u> 2	he National Board of bloyed by <u>Arkwright</u> inspected the compone <u>4/4/9/</u> en performed in acco or nor his employer m eport. Furthermore, ary or property damag	nutual insura ents described i and state that rdance with Se hakes any warra neither the Ins ge or a loss of a	in this Owner's to the best of ction XI of the anty, expressed spector nor his
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D	ate <u>Apr</u>	1 4, 19	<u>91</u>			
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		As Required by the Provisions of ASME Cod	le Section XI		
			Sheet :	1 of 1	
1.	Owner: Southern Calif	ornia Edison Company Frove Ave., Rosemead, CA 91770	ASME	MO:	90102663
	2244 Walnut G	HOVE AVE., ROSELLEAU, CA 91770	Unit:	1	
2.		clear Generating Station San Clemente, CA 92674-0128	RS:	GEN-(	004
3.	Work Performed by:	Southern California Edison	P&ID:	517811	15
4.	System Identification:	Safety Injection			

(a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-2, Code Cases: None

- (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Mechanical Snubber PSA 10-6	Pacific Scientific	16888	N/A	S1-06-6003-H-008			
Load Pin	Pacific Scientific	Et. 8652399	N/A	RSO 3406-90 SA-564, Gr 630	1990	Replacement	No

### 7. Work Description:

The mechanical snubber load pin was replaced. The replacement was verified as meeting the requirements of the original construction code as documented on code reconciliation CR-90-003. A satisfactory VT-1 was performed on the load pin. After installation the support assembly was visually inspected (VT-3).

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] VT-3

Pressure: N/A psig Temp: N/A State and the state of the state of the state of the state of the state of the state of the state of the state at state of the state of the state of the state of the state of the state of the state of the state of the state at state of the state of the state of the state of the state of the state of the state of the state of the state at state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of

5.

9. Remarks: None	
(Applicable Manufacturer's Data Reports to be attached)	
CERTIFICATE OF COMPLIANCE	
We certify that the statements made in this report are correct and this <u>replacement</u> conforms to rules of the ASME Code, Section XI. (repair or replacement)	) the
Signed <u>A A Supvg. ASME Codes Engineer</u> <u>13 Feb</u> <u>19 9</u> (Owner or Owner's Designee) Title (Date)	
(Owner of Owner's Designee)	
CERTIFICATE OF INSPECTION	
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vess Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compa- (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner Report during the period from <math>12/18/90</math> to <math>2/14/91</math> and state that to the best my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, express or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arist</u>	er's t of the · sed his
from or connected with this inspection. <u>End</u> <u>Called</u> Commissions <u>1864</u> <u>California</u> Inspector's Signature (State or Province, National Board)	
Date <u>Feb 14 19 91</u>	

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

NIS-2

### <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

					: 2
1. Owner:	2244 Waln	California Edison Company ut Grove Ave.	Trave	eler: S01-90-001	
	•	CA 91770	Unit:	1	
2. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	MMP:	1-3548.01SN	
3. Work Perfor	rmed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90010525000 90010545000	

4. System Identification: Volume Control & Charging System (VCC) P&ID: 5178135

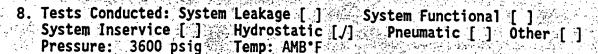
5. (a) Applicable Construction Code:ASA B31.1, 1955 Ed. for piping, Code Classified: XI-2 ASA B16.5, 1957 Ed. for valves Code Class: XI-2

- (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition thru S'78 Addenda, Code Cases: N/A
- 6. Identification of Components Repaired or Replaced:

		•					
Name Component	Name of Manufacturer	  Manufacturer  Serial No.	•	  Other  Identification	  Year  Built	Repaired  Replaced,or  Replacement	ASME Cod Stamped Yes/No
2" pipe Sch. 160	TI Stainless  Tubes Ltd.	HT #SU190	N/A	Item 2   RSO #1540-90	   N/A	Replacement	NO NO
2" elbow	Alloy Stainless	   HT #SA1	N/A	Item 3 RSO #1540-90	   N/A	Replacement	NO
i" pipe Sch. 160	Sandvik   Steel Co.	   HT #46204 <b>3</b>	N/A	ltem 6 & 7 RSO #1919-90	   N/A	  Replacement	NO
" pipe ch. 160	Sandvik   Steel Co.	HT #474744	•N/A	Item 11 RSO #3298-89	   N/A	Replacement	NO -
n" globe valve	Kerotest Hfg. Corp.	CAR27-17	N/A	ltem 8 RSO #1356-89	1989	Replacement	YES
i" globe valve	Kerotest   Mfg. Corp.	CAR27-20	H/A	Item 9 RSO #1356-89	1989	Replacement	YES
" Venturi ssembly	Permutit Co.	N-5493	N/A	Item 1 RSO #3298:89 FE-1112	N/A	  Replacement	No

7. Work Description:

MMP 1-3548.01SN Replaces exsisting inline flow element/transmitter (FIT-1112) with new venturi (FE-1112). Fabricate welds A, SA, SB, SC, SD, SE, SF, SG, SH, SI. Perform hydrotest.



9. Remarks:

# Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>CERACEMENT</u> conforms to the rules of the ASME Code, Section XI (Repair or Replacement) Signed <u> $ARM_{T}$  Bcc/DFE(achwg)</u> <u>Nov 14</u>, 19<u>0</u> (Owner or Owner's Designee) Title (Date)

# CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>7/5/90</u> to <u>11/1/490</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

Inspector's Signature Commissions CA 1864 (State or Province, National Board Date\_November 16\_, 1990\_\_\_\_\_

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

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Page 2 of

		As Required by the Provisions of ASME Cool	Sheet 1	of 1	
1. Owne	Owner: Southern Califo	Owner: Southern California Edison Company			
	2244 Walnut G	2244 Walnut Grove Ave., Rosemead, CA 91770		1	
2.	Plant: San Onofre Nu P.O. Box 128, S	clear Generating Station San Clemente, CA 92674-0128	RS:	264-90	
3.	Work Performed by:	Southern California Edison	P&ID:	5178221 (E-3)	
4.	System Identification:	Auxiliary Feedwater			
÷ .		- 1 DCO 421 Code Class	ified XI-2. (	Code Cases: None	

- 5. (a) Applicable Construction Code: BSO-421, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

						Repaired,	ASME Cod
Name of	Name of	Manufacturer	National Board No.	Other Identification	Year Built	Replaced, or Replacement	Stamped Yes/No
Component	Manufacturer	Serial No.		S1-AFW-CV-113	N/A		No
" Globe Valve	Dresser	61562-1-1	N/A			· ·	
				RSO 3573-90	N/A	Replacement	No
/8" Bolts (4)	Cardinal	Et. D2	N/A	SA-193, Gr B7			
				RSO 1458-90	N/A	Replacement	No
/8" Nuts (4)	Cardinal	Ht. DG2706	N/A	SA-194, Gr 2H			
				RSO 1154-87	N/A	Replacement	Мо
Plug/Stem Assembly 316SS/Stellite HP	Dresser	N/A	N/A				

### 7. Work Description:

8.

The valve plug/stem assembly and bolting required replacement. The replacements were verified to be in compliance with the original construction code requirements.

~ <u>...</u> ....

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other []

Pressure: 800 psig Temp: 525 °F

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).	Remarks:	None						
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			<u>CERTIFI(</u>	CATE OF	COMPLIA	ANCE		
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rules o	of the ASME	Code, Section $\Lambda$	n XI.		. (			G
Signed		the	1	Supvg. AS	<u>ME Codes Er</u> Title	ngineer 2	(Date)	19_1
	(Owr	er or Owner	's Designee)		1100		(2000)	
		• .						
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	NIS-2 <u>OWNER'S REPORT OF REPAIR OR R</u> As Required by the Provisions of ASME Code	EPLACEMENT Section XI
	As required by the results	Sheet 1 of 1
1.	Owner: Southern California Edison Company	ASME MO: 89090852
•	2244 Walnut Grove Ave., Rosemead, CA 91770	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	RS: 152-90
3.	Work Performed by: Southern California Edison	P&ID: 5178221
4.	System Identification: Auxiliary Feedwater	
5.	<ul> <li>(a) Applicable Construction Code: SV-2619: ANSI B31.1</li> <li>AFW-355: ANSI B31.1, 1977 Edition, Code Classified</li> </ul>	and ANSI B16.34, 1977 Edition; 1 XI-2, Code Cases: None
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(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, 578 Addenda, Code Cases: None

6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built N/A	Replaced, or Replaced, or Replacement Replaced	ASME Cod Stamped Yes/No No
" Solenoid Valve	Target Rock	N/A	N/A	S1-AFW-SV-2619			
" Solenoid Valve	Target Rock	11	N/A	RSO 1605-90 Part# 79RR-004	N/A	Replacement	No
" Globe Valve	Kerotest	N/A	N/A	S1-AFW-355	N/A	Replaced	No
" Globe Valve	Kerotest	NAV5-24	N/A	RIP-P-499-82 Part# SCN-4PSW- 20C	N/A	Replacement	No

### 7. Work Description:

The existing values in plant location S1-AFW-2619 and S1-AFW-355 (bypass) were replaced. The replacement values were verified to be in compliance with the original construction code requirements. The values were installed by welding using the existing piping.

References: NCR SO1-P-7476, WR1-90-296,297

يحوالم محمد الحماد الحاجا

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 550 psig Temp: N/A

8.

).	Remarks:	None						
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		(24	plication					
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1. Own	er: Southern Calif	ornia Edison Company	ASME M	IO: 89011456
	2244 Walnut C	rove Ave., Rosemead, CA 91770	Unit:	L
2. Plan	t: San Onofre Nu P.O. Box 128,	uclear Generating Station San Clemente, CA 92674-0128	RS: (	)46-90
3. Wor	k Performed by:	Southern California Edison	P&ID: :	5178145 (E-6)
4. Syst	em Identification:	Boric Acid		

5. (a) Applicable Construction Code: ANSI B31.1/Westinghouse Specification E-67525, Code Classified XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Injection Pump	Crane	78398-1	N/A	S1-BAS-G-948 Model GLD-3K-7515E	Unknown		No
Cap Screws (10)	Texas Bolt	Et. 8651267	N/A	RSO 0110-90	N/A	Replacement	No

### 7. Work Description:

The boric acid injection pump bolting (cap screws) on the bell portion was mixed with carbon steel and stainless steel and the length of the bolting varied which did not allow for appropriate thread engagement. Replaced the boric acid injection pump cap screws. The replacements were verified to be in compliance with the original construction code (Westinghouse E-Spec 675245).

References: NCR SO1-P-6907, FCN S-4248M

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 79% Tank Level Temp: N/A

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	·		(Applicable Man	nufacturer's Dat	a Reports to b	e attached)	. *	
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Signed		er or Owner	r's Designee)		Title		(Date)	
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	<u>OWNER'S R</u>	equired by the Provisions of ASME Co	te Section XI	
	As R	equired by the Provisions of Asing Con	Sheet 1 c	of 1
1.	Owner: Southern California	Edison Company	ASME M	10: 90081729
	2244 Walnut Grove	Ave., Rosemead, CA 91770	Unit:	1
2.	Plant: San Onofre Nuclear P.O. Box 128, San C	Generating Station lemente, CA 92674-0128	RS:	302-90
3.	Work Performed by: Sou	thern California Edison	P&ID:	517S120 (F-6)
4.	System Identification: Con	ntainment Recirculation Spray	. •	

 (a) Applicable Construction Code: ASA B16.5, 1957 Edition, Code Classified XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

# 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
1" Globe Valve	Kerotest	OX11-16	N/A	S1-CRS-337	1	Replaced	Yes
1" Globe Valve	Kerotest	LAD5-13	N/A ·	RSO 8545-84	1984	Replacement	Yes

### 7. Work Description:

5.

The existing valve was damaged beyond repair and required replacement. The replacement valve was reconciled and verified as per in compliance with the original construction code requirements and installed by welding. A NDE/PT examination was performed on the weld affected area with no relevant indication noted.

References: WR1-90-627, ME-90-056, 1PT-017-91, 1PT-018-91

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 220 psig Temp: N/A

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	Remarks:	None		·• ·					
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NIS-2

# OWNER'S REPORT OF REPAIR OR REPLACEMENT

	As Required by the Provisions of ASME Code Section XI										
· · · · ·		Sheet 1 of 1									
1.	Owner: Southern California Edison Company	ASME MO: 89060748									
	2244 Walnut Grove Ave., Rosemead, CA 91770	Unit: 1									
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	<b>RS:</b> 438-89									
3.	Work Performed by: Southern California Edison	P&ID: 5178120 (E-6)									
4.	System Identification: Containment Recirculation										

- 5. (a) Applicable Construction Code: ASME Section III, Class 2, 1971 Edition, S'73 Addenda, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
4" Gate Valve	Anchor Darling	E6145-1-3	N/A	S1-CRS-338	N/A	Repaired	Yes

### 7. Work Description:

Packing gland leak-off plug leaked at mechanical connection. The plug was removed, threads <u>cleaned</u>, reinstalled and seal welded. A NDE/PT examination was performed on the weld area with no relevant indication noted.

References: NCR SO1-P-7293, WR1-89-573, 1PT-016-90

8. Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other []

Pressure: 220 psig Temp: N/A

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,	Remarks:	None			<u>.</u>	
	<u></u>		(Applicable Manufacturer's I	Data Reports to be attache	ed)	
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### NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT As Required by the Provisions of ASME Code Section XI

1.	Owner:	Southern California Edison Company	ASME M	<b>IO:</b> 87040504
		2244 Walnut Grove Ave., Rosemead, CA 91770	Unit:	1
2.	Plant:	San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92672	RS:	011-88
3.	Work Pe	erformed by: Southern California Edison	P&ID:	5178120 (C8)

System Identification: Containment Spray & Recirculation (CRS) 4.

(a) Applicable Construction Code: ASA B31.1, 1955 Edition, 5. Code Classified XI-2

- (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

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Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification		Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Globe Valve	Powell Valve	N/A	N/A	S1-CRS-374	N/A	Replaced	No
Globe Valve 2"150≇	Powell Valve	Part≢ 2474 SWE	N/A	ME-89-043 RSO# 2456-89	N/A	Replacement	No
Pipe Nipple 2"schl0s	Sandvik Steel	Ht <b>#</b> 472180	N/A	RSO# 0810-88	N/A	Replacement	No

- 7 Work Description: Existing valve leaks past the seat area and is damaged beyond repair. Replace valve with qualified in-kind valve and the short sections of pipe on both sides of said valve. The existing valve and the short sections of pipe on either side of valve were removed from the plant system and scrapped. The replacement valve and piping, which were verified as meeting the requirements of the original construction code, were installed in accordance with Weld Record WR1-88-038. A Hydrostatic Pressure Test with a VT-2 inspection was performed, with no leakage noted inside the examination boundary.
- Tests Conducted: System Leakage [ ] System Functional [ ] System Inservice [ ] Hydrostatic [X]...Pneumatic [ ] Other [ ] 8. Pressure: 187 psig Temp: N/A °F

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	(Applicable Manufacturer's Data Reports to be attached)
	- CERTIFICATE OF COMPLIANCE
<u>REF</u> repair gned_	by that the statements made in this report are correct and this $\frac{PLACEMENT}{PLACEMENT}$ conforms to the rules of the ASME Code, Section XI. For replacement) (Conforment) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (Conformed) (
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te:	Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is $8-1/2$ in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, an (3) each sheet is numbered and the number of sheets is recorded at top of this form.

N1S-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT As Required by the Provisions of ASME Code Section XI Sheet 1 of 1 90091282 ASME MO: Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770 1. 1 Unit: Plant: San Onofre Nuclear Generating Station 325-90 RS: P.O. Box 128, San Clemente, CA 92674-0128 2. P&ID: 5178120 (E-3) Southern California Edison Work Performed by: 3. Containment Recirculation Spray System Identification: 4. Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-2, Code Cases: (a) 5. Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 None (b) Addenda, Code Cases: None Identification of Components Repaired or Replaced: ASME Code Repaired, 6. Seemad |

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#### Work Description: 7.

The piping system was disassembled to allow for the removal and reapplication of protective coating to the inside surface. The original piping was reassembled by welding. A PSE/ISI surface examination (MT) was conducted on piping weld greater than 4".

Reference: NCR 90070015, WR1-90-682, WR1-90-683

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] 8. Pneumatic [] Other [X] Pressure: N/A psig Temp: N/A

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9. Remarks: This is an open ended system. A flow test (per SO1-I-2.14) was conducted in lieu of a hydrostatic test. [Ref: ASME XI IWC-5222(c)]

(Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

 We certify that the statements made in this report are correct and this repair conforms to the rules of the ASME Code, Section XI.
 conforms to the (repair or replacement)

 Signed
 Meinul
 Supvg. ASME Codes Engineer
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 192/

 (Owner or Owner's Designee)
 Title
 (Date)

# CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u>, employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from <u>9/30/90</u> to <u>4/2/91</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Commissions <u>1862</u> California 1. Onnesson (State or Province, National Board) Inspector's Signature Paril 2, 1991 Date

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

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	:======================================					
1. Owner:	2244 Walnu	alifornia Edison Company t Grove Ave.	Trave	Traveler: S01-91-010		
	Rosemead,		Unit:	1		
2. Plant:	San Onofre P. O. Box	Nuclear Generating Station 128, San Clemente, CA 92674-0128	FCN:	F-5538M		
3. Work Pert	formed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CWO:	91020270000 91020205000		
4. System I	dentification:	(CRS) Containment/Spray/Recir. Sys	. P&ID:	5178120		
5. (a) Apj	olicable Const	ruction Code: ASA B16.5, 1957 ED. C	ode Cla	ss: XI-2		

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	Hanufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
1/2" Plate	Grano Steel Corp.	Heat No. V01003	N/A	RSO# 0147-91	N/A	Replacement	No
<u></u>							
		•	.				
			1				

7. Work Description:

FCN F-5538M installs a flow direction indicator on valve S1-CRS-CV-517, fabricates welds, TA & TB

8. Tests Conducted: None

### 9. Remarks:

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

### CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI (Repair or Replacement)

Signed <u>MAMacaling</u> FIEW CONST MGR 3/19, 1991 (Owner or Owner's Designee) Title (Date)

### CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from 2/13/6/ to <u>79/97</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer makes any warranty, for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

ignature Commissions <u>1862</u> <u>(A</u> ignature) (State or Province, National Board Inspector's Signature March 19, 1991

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (!) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report included on each sheet is recorded at the top of this form.

Page 2 of

### NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT As Required by the Provisions of ASME Code Section XI

				· · · · · · · · · · · · · · · · · · ·	
l. Owner:	2244 Walni	California Edison Company ut Grove Ave. CA 91770	Traveler: SO1-91-01		
	KUSelliedu,		Unit:	1	
2. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92674-0128	FCN:	F-5538M	
3. Work Per	formed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CWO:	91020270000 91020207000	
4. System I	dentification	: (CRS) Containment/Spray/Recir. Sys	. P&ID:	5178120	
5. (a) An	nlicable Cons	truction Code: ASA B16.5, 1957 ED. C	ode Clas	ss: XI-2	

Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A (b)

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	Manufacturer Serial No.		Other Identification	Year Built	Repaired Replaced,or Replacement	ASME Cod Stamped Yes/No
1/2" Plate	Grano Steel Corp.	Heat No. V01003	N/A	RSO# 0147-91	N/A	Replacement	No
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7. Work Description:

FCN F-5538M installs a flow direction indicator on valve S1-CRS-CV-518, fabricates welds, TC & TD

8. Tests Conducted: None

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# 9. Remarks:

# Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI (Repair or Replacement)

Signed <u>MAMacandon FIELD CONSTM62</u> 3/19, 1991 (Owner dr Owner's Designee) Title (Date)

CERTIFICATE OF INSPECTION
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>*Arkwright Mutual Insurance Company</u> of <u>Norwood, Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>2/(a/9/</u> ) to <u>3/19/9/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. *Factory Mutual System
Date March 19, 1991
Date - ///////// 19//

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

===:		As Required by the Provisions of ASME Code	<u>Sectic</u>	<u>on XI</u> 	=
1.	Owner:	Southern California Edison Company	ASME M	<b>10:</b> 89020162	
		2244 Walnut Grove Ave., Rosemead, CA 91770	Unit:	1	
2.	Plant:	San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92672	RS:	121-89	
3.	Work Pe	erformed by: Southern California Edison	P&ID:	5178120 (B8)	
4.	System	Identification: Containment Recirculation S	pray (C	CRS)	

- 5. (a) Applicable Construction Code: API-650, 1st Ed./ Bechtel Spec. BSO-433 Code Classified: XI-2
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Refueling Water Storage Tank	Pittsburgh- Des Moines	3246-D1	<u>N/A</u>	S1-CRS-D-1	N/A		No
Manway Bolting (28)	Nova Machine Products	Ht.# 124025	N/A	RSO# 1009-89	N/A	Replacement	No

- 7. Work Description: Manway bolting was found not to have enough thread engagement with attaching hex. nuts, which generated NCR # SO1-P-6944. The existing manway bolts were then removed one at a time and scrapped. The replacement bolts, which complied with the requirements of the original construction code, were installed using the existing hex nuts. A System Functional Pressure Test with a VT-2 inspection was performed, with acceptable results.
- 8. Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 15 psig Temp: Amb.°F

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9. Remarks: None

•	(Applicable Manufacturer's Data Reports to be attached)
	CERTIFICATE OF COMPLIANCE
le certify	that the statements made in this report are correct and this <u>CEMENT</u> conforms to the rules of the ASME Code, Section XI.
(repair o	v replacement)
igned (Own	A Supvg. ASME Codes Engineer 23 July 19 90 Ner or Owner's Designee) Title (Date)
	CERTIFICATE OF INSPECTION
Boiler an <u>Californi</u> <u>System</u> ) o this Owne and state replaceme Code. By makes any replaceme employer	indersigned holding a valid commission issued by the National Board of the Pressure Vessel Inspectors and the State or Province of the employed by <u>Arkwright Mutual Insurance Company (Factory Mutual</u> of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in the er's Report during the period from <u>April 19(90)</u> to <u>April 19(90)</u> to the best of my knowledge and belief, this repair or ent has been performed in accordance with Section XI of the ASME signing this certificate, neither the Inspector nor his employer warranty, expressed or implied, concerning the repair or ent in this Report. Furthermore, neither the Inspector nor his shall be liable in any manner for any personal injury or property a loss of any kind arising from or connected with this inspection.
Inspecto	Commissions <u>1393</u> California pr's Signature (State or Province, National Board)
Date <u> </u>	uly 24 1990
l	Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is $8-1/2$ in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at th top of this form.

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N-5 #N/A

	NIS-2
OWNER'S	REPORT OF REPAIR OR REPLACEMENT
As Required by	the Provisions of ASME Code Section XI

1.	Owner:	Southern Caritornia Edison company	ASME MC	90021085
		2244 Walnut Grove Ave., Rosemead, CA 91770	Unit:	1
2.	Plant:	San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92672	RS:	093-90
3.	Work Pe:	rformed by: Southern California Edison	P&ID:	5178120
4.	System	Identification: CONTAINMENT SPRAY & RECIRC.	SYSTEM	

5. (a) Applicable Construction Code: ASA B31.1-1955 Ed. Code Classified XI-2 Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

6. Identification of Components Repaired or Replaced:

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Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification		Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
REFUELING WATER Filter Pump	WORTHINGTON	A144771	N/A	\$1-CRS-6-60	N/A	>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	NO
INLET FLANGE BOLTING (STUDS)	TEXAS BOLT	JK 16	N/A	RSO 0090-84	N/A	REPLACEMENT	ŇŌ
INLET FLANGE Bolting (nuts)	TEXAS BOLT	JK 52	N/A	RSD 0090-84	N/A	REPLACEMENT	NO

7. Work Description:

Replacement bolting was verified as meeting the original construction code and material specification (Reference: Material Evaluation ME-90-013 & IDCN AB2631M) The replacement studs were cut to the proper length and installed with the replacement nuts in the inlet flange. A VT-2 examination was performed in conjunction with a system functional pressure test.

8. Tests Conducted: System Leakage [ ] System Functional [X] System Inservice [ Hydrostatic [ ] Pneumatic [ ] Other [ ] Pressure: 74 psig Temp: N/A <sup>o</sup>F 9. Remarks: NONE

(Applicable Manufacturer's Data Reports to be attached) CERTIFICATE OF COMPLIANCE We certify that the statements made in this report are correct and this REPLACEMENT \_\_\_\_\_ conforms to the rules of the ASME Code, Section XI. (repair of replacement) Supry. ASME Codes Engineer 19 April 990 Signed / (Owner or Owner's Designee) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from 3/13/90 to 4/6/90 and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. Commissions <u>1272</u> California (State or Province, National Board) Inspector's Signature 4/23 19 90 Date Supplemental sheets in the form of lists, sketches, or drawings may Note: be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

# ASME Section XI Abstract Owner's Summary of Repair or Replacement

•	Owner:	Southern C	alifornia Edison t Grove Ave	n Company	Trave	ler:	S01-91-(	04
		Rosemead,	t Grove Ave. CA 91770		Unit:	1		
•	Plant:	San Onofre P. O. Box	Nuclear Genera 128, San Clemen	ting Station te, CA 92674-0128	MMP:	1-364	3.00SN	
•	Work Perfor	med by:	Bechtel Const P. O. Box 450 San Clemente,	ruction Co. CA 92674-0128	CWQ:		2174000 2301000	
•	System Idea	tification:	Containment Re	circ. Spray (CRS)	P&ID:	5178	8120	
5.	Plant Tag I	lo.: See NIS	-2	Serial No.: S	See NIS-2			
5.	Component:	See NIS-2		Name: See NIS-2	Size:	6" <i>φ</i>		
1.	Code: ASA	B31.1, 1955	Ed. Class:	XI-2				
3.	Purpose (S	tatement of	Problem):					
	MMP 1-3643	.00SN replac	es existing RO-	525 with a new res	ized orifi	ce pla	ate.	
	code	•		eviewed to verify c				icat
	code 2. A Be	nch Hydrosta ting orifice	tic Test with V	eviewed to verify c T-2 was performed ( -RO-525) was repla	on the ori	fice	plate.	
10	code 2. A Be 3. Exis	nch Hydrosta ting orifice e.	tic Test with V e plate (S1-CRS	T-2 was performed (	on the ori	fice	plate.	
10	code 2. A Be 3. Exis plat	nch Hydrosta ting orifice e.	tic Test with V e plate (S1-CRS	T-2 was performed (	on the ori	fice	plate.	
10	code 2. A Be 3. Exis plat	nch Hydrosta ting orifice e.	tic Test with V e plate (S1-CRS	T-2 was performed (	on the ori	fice	plate.	
10	code 2. A Be 3. Exis plat . Material	nch Hydrosta ting orifice e.	tic Test with V e plate (S1-CRS	T-2 was performed (	on the ori	fice new re	olate.	
10	code 2. A Be 3. Exis plat . Material	nch Hydrosta ting orifice e. Jsed: See N	tic Test with V plate (S1-CRS	T-2 was performed ( -RO-525) was repla	on the ori	fice new re	olate.	
10	code 2. A Be 3. Exis plat . Material	nch Hydrosta ting orifice e. Jsed: See N	tic Test with V plate (S1-CRS	T-2 was performed ( -RO-525) was repla	on the ori	fice new re	olate.	
10	code 2. A Be 3. Exis plat . Material	nch Hydrosta ting orifice e. Jsed: See N	tic Test with V plate (S1-CRS	T-2 was performed ( -RO-525) was repla	on the ori	fice new re	olate.	

### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> <u>As Required by the Provisions of ASME Code Section XI</u>

e=====================================				
1. Owner:	Southern Ca 2244 Walnut	lifornia Edison Company Grove Ave.	Trave	ler: S01-91-004
	Rosemead, C	A 91770	Unit:	1
2. Plant:	San Onofre P. O. Box 1	Nuclear Generating Station 28, San Clemente, CA 92674-0128	MMP:	1-3643.00SN
3. Work Perfo	ormed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CWO:	90122174000 91012301000
4. System Ide	entification:	Containment Recirc. Spray (CRS)	P&ID:	5178120
5. (a) App	icable Constr	uction Code: ASA B31.1, 1955 Ed.	Code C1	ass XI-2
(b) App	icable Editic	on of Section XI Utilized for Repair	irs or Re	eplacements:

1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	]  Manufacturer  Serial No:	National Board No.	  Other  Identification	Year  Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
6" x 300# Orif. Plate	Permutit Co.	S/N²  N-5581	N/A	Item #1, RSO #0151-91  S1-CRS-R0-525	N/A	Replaced	No
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### 7. Work Description:

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MMP 1-3643.00SN removed existing SI-CRS-R0-525 and installed a new resized Restricting Orifice. A Hydrostatic Test with VT-2 was performed prior to installation.

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] Pneumatic [] Other [] Pressure: 388 psig Temp: >60°F

#### 9. **Remarks:**

# Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI (Repair or Replacement)
Signed $\underline{TE}$ $\underline{Junlul}$ $\underline{C-B}$ , 19 <u>11</u> (Owner or Owner's Designee) Title (Date)
CERTIFICATE_OF_INSPECTION
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>*Arkwright Mutual Insurance Company</u> of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>125/91</u> to <u>248/91</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. *Factory Mutual System
<u>Deleanipson</u> Inspector's Signature Date <u>Fibruary</u> 8, 19 <u>91</u>
Inspector's Signature       Commissions       1862 CA         Inspector's Signature       (State or Province, National Board         Date       Fibruary       8       , 1951         Note:       Supplemental sheets in form of lists, sketches, or drawings may be used provided         cize is 8-1/2 in x 11 in (2) information in Items 1 through 4 on this data report

1) is included on each sheet is recorded at the top of this form.

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Page 2 of

ASME Section XI Abstract Owner's Summary of Repair or Replacement

				=======	
1. 0	wner:	Southern California Edison Compan 2244 Walnut Grove Ave. Rosemead, CA 91770	У	Travel	ler: S01-91-003
				Unit:	1
2. P	lant:	San Onofre Nuclear Generating Sta P. O. Box 128, San Clemente, CA	tion 92674-0128	MMP:	1-3643.00SN
3. W	lork Perfor	med by: Bechtel Construction P. O. Box 450 San Clemente, CA 926		CWO:	90122173000 91012301000
4. S	ystem Iden	tification: Containment Recirc. Sp	ray (CRS)	P&ID:	5178120
5. P	lant Tag N	o.: See NIS-2 Ser	ial No.: See	NIS-2	
6. C	component:	See NIS-2 Name:	See NIS-2 S	ize: 6	5" <i>φ</i>
7. C	code: ASA	B31.1, 1955 Ed. Class: XI-2			
8. P	Purpose (St	atement of Problem):			
M	IMP 1-3643.	00SN replaces existing R0-526 with	a new resized	orific	ce plate.
9. N	larrative S	ummary (Brief Description of Work	Performed):		•
1	. The ap	ppropriate documents were reviewed	to verify comp	liance	with the applicable
. 2	A Ben	ch Hydrostatic Test with VT-2 was	performed on t	he orii	fice plate.
3	8. Exist plate	ing orifice plate (S1-CRS-RO-526)	was replaced	with n	ew resized orifice
10.	Material U	sed: See NIS-2			
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			*************	882883	
	-				
					•
	Prepa	red by: <u>Lester Taylor</u>	Date	02/0	04/91
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#### NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT As Required by the Provisions of ASME Code Section XI

. Owner:	Southern C 2244 Walnu	alifornia Edison Company t Grove Ave.	Trave	ler: S01-91-003
	Rosemead,		Unit:	1
. Plant:	San Onofre P. O. Box	Nuclear Generating Station 128, San Clemente, CA 92674-0128	MMP:	1-3643.00SN
. Work Per	formed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CW0:	90122173000 91012301000
. System I	ientification:	Containment Recirc. Spray (CRS)	P&ID:	5178120
. (a) Ap	plicable Const	ruction Code: ASA B31.1, 1955 Ed.	Code Cla	ass XI-2

Applicable Edition of Section XI Utilized for Repairs or Replacements: (b) 1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	  Name of  Manufacturer	  Manufacturer  Serial No.	  National  Board No.	Other Identification	  Year  Built	Repaired Replaced,or Replacement	
6" x 300# Orif. Plate	Permutit Co.	S/N=  N-5583	N/A	ltem #1, RSO #0151-91  S1-CRS-R0-526	N/A	Replaced	No
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		•		ter and ter and ter and ter and ter and ter and ter and ter and ter and ter and ter and ter and ter and ter and	·· :.	×	· .

#### 7. Work Description:

MMP 1-3643.00SN removed existing S1-CRS-R0-526 and installed a new resized Restricting Orifice. A Hydrostatic Test with VT-2 was performed prior to installation. 

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] Pneumatic [] Other [] Pressure: 388 psig Temp: >60°F

## 9. Remarks:

# Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

gned <u>TE Taum La La</u> (Owner or Owner's Design	nee) Title	<u>2-8</u> (Date)	_, 19 <u>~11</u>
<u><u></u></u>	ERTIFICATE OF INS	SPECTION	
, the undersigned holding a v nd Pressure Vessel Inspectors Arkwright Mutual Insurance Co omponents described in this O Q/B/9/ and state that to eplacement has been performed igning this certificate, neit xpressed or implied, concerni urthermore, neither the Inspe or any personal injury or pro onnected with this inspection	and the State of ompany of <u>Norwood</u> . Wher's Report dur the best of my b in accordance wi ther the Inspector ing the repair or ector nor his employerty damage or a	Massachusetts ring the period knowledge and t ith Section XI r nor his emplo replacement in loyer shall be a loss of any b	have inspected the from <u>125/9</u> to belief, this repair or of the ASME Code. By over makes any warranty, this Report. liable in any manner cind arising from or
<u>Dhompson</u> Comm Inspector's Signature Date <u>February</u> 8	nissions <u>1862</u> (State of	<i>DA</i> r Province, Nat	tional Board
an Telanan (	. 19 <u>9/</u>		

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	NIS-2	
OWNER'S REPORT O	F REPAIR OR REPLAC	<u>EMENT</u>

		As Required by the Provisions of ASME (	Code Section XI
			Sheet 1 of 1
Own	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770		ASME MO: 90010412
			Unit: 1
Pla		uclear Generating Station San Clemente, CA 92674-0128	<b>RS:</b> 312-90
Wo	rk Performed by:	Southern California Edison	<b>P&amp;ID:</b> 5178120
Sys	tem Identification:	Containment Recirculation Spray	

- (a) Applicable Construction Code: ASME Section VIII, Westinghouse E-Spec. 675262, Code Classified: XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Relief Valve	Crosby	48809	N/A	S1-CRS-RV-882	N/A		No
Disc	Crosby	Ht. 06936 <sup>.</sup> Part No. 81518-31-0001	N/A	RSO 0924-84	N/A	Replacement	No

#### 7. Work Description:

The relief valve failed the IST bench test. The disc was found to require replacement. The replacement disc was verified to be in compliance with the original construction code. After installation the valve was reset at the required lift pressure. A VT-2 examination was conducted in conjunction with a system functional pressure test with no leakage noted.

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Reference: NCR 90080273

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Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 224 psig Temp: N/A

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		(Applicable Mar	nufacturer's Data Reports to	be attached)		
		<u>CERTIFI</u>	CATE OF COMPL	IANCE		
We certify that rules of the AS	the stateme ME Code,	ents made in this rej Section XI.	port are correct and this	s <u>replacem</u> (repair or rej	ent placement)	conforms to the
Signed	a ali	1.le	Supvg. ASME Codes	Engineer	4/3	_19 <i>91</i>
	Owner or (	Owner's Designee)	Title		(Ďate)	
		• . *				
Inspectors a (Factory Mu Report durin my knowled ASME Code or implied, o employer sh	and the Sta $\frac{11}{12}$ System ing the period ge and belie the By signing concerning all be liable meeted with $\int \int \partial \rho  d\rho$	ling a valid commisse ate or Province of $g_{1}$ of <u>Norwood</u> , <u>Mass</u> and from <u><math>g//2</math></u> of from <u><math>g//2</math></u> ef, this repair of replace the repair or replace in any manner for a n this inspection.	ICATE OF INSPECtion issued by the Nation California, employed by achusetts have inspected $\frac{790}{10}$ to $\frac{3/2}{3}$ accement has been perfort ther the Inspector nor him ement in this Report. For the personal injury or pro- ons $\frac{1574}{2}$ Califor (State or Province, National Science)	mal Board of 1 Arkwright M the componen 1/9/ rmed in accord s employer ma Furthermore, n operty damage	ts described and state that lance with Sikes any warn either the In or a loss of	in this Owner's at to the best of ection XI of the ranty, expressed aspector nor his

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

1 **CF** 5 1-22-91

# ASME Section XI Abstract Owner's Summary of Repair or Replacement

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<ol> <li>Component: Flow Control Ball Valve Name: G</li> <li>Code: ASA-B16.5, 1957 ED. Class: X1-2</li> <li>Purpose (Statement of Problem): MMP 1-3582.005 valve operato</li> <li>Associated Drawings: 1810-AA737-D0006 FIDCN M-7539</li> <li>Narrative Summary (Brief Description of Work P</li> <li>The appropriate documents were reviewed t construction code.</li> <li>Valve actuator mounting plate and valve</li> </ol>	
<ol> <li>Work Performed by: Bechtel Construction C P. O. Box 450 San Clemente, CA 9267</li> <li>System Identification: Containment Recirculat</li> <li>Plant Tag No.: S1-CRS-CV-517 Seri</li> <li>Component: Flow Control Ball Valve Name: G</li> <li>Code: ASA-B16.5, 1957 ED. Class: X1-2</li> <li>Purpose (Statement of Problem): MMP 1-3582.005 valve operato</li> <li>Associated Drawings: 1810-AA737-D0006 FIDCN M-7539</li> <li>Narrative Summary (Brief Description of Work P</li> <li>The appropriate documents were reviewed t construction code.</li> <li>Valve actuator mounting plate and valve</li> </ol>	Unit: 1 on 2672 MMP: 1-3582.00SN
<ol> <li>5. Plant Tag No.: S1-CRS-CV-517 Seri</li> <li>6. Component: Flow Control Ball Valve Name: G</li> <li>7. Code: ASA-B16.5, 1957 ED. Class: X1-2</li> <li>8. Purpose (Statement of Problem): MMP 1-3582.005 valve operato</li> <li>Associated Drawings: 1810-AA737-D0006 FIDCN M-7539</li> <li>9. Narrative Summary (Brief Description of Work P</li> <li>1. The appropriate documents were reviewed t construction code.</li> <li>2. Valve actuator mounting plate and valve</li> </ol>	<b>CWO:</b> 90081311000
<ol> <li>Component: Flow Control Ball Valve Name: G</li> <li>Code: ASA-B16.5, 1957 ED. Class: X1-2</li> <li>Purpose (Statement of Problem): MMP 1-3582.005 valve operato</li> <li>Associated Drawings: 1810-AA737-D0006 FIDCN M-7539</li> <li>Narrative Summary (Brief Description of Work P</li> <li>The appropriate documents were reviewed t construction code.</li> <li>Valve actuator mounting plate and valve</li> </ol>	on Spray (CRS) P&ID: 5178120
<ol> <li>Code: ASA-B16.5, 1957 ED. Class: X1-2</li> <li>Purpose (Statement of Problem): MMP 1-3582.005 valve operato Associated Drawings: 1810-AA737-D0006 FIDCN M-7539</li> <li>Narrative Summary (Brief Description of Work P 1. The appropriate documents were reviewed t construction code.</li> <li>Valve actuator mounting plate and valve</li> </ol>	1 No.: 5099
valve operato Associated Drawings: 1810-AA737-D0006 FIDCN M-7539 9. Narrative Summary (Brief Description of Work P 1. The appropriate documents were reviewed t construction code. 2. Valve actuator mounting plate and valve	lf-Western Size: 6"
Associated Drawings: 1810-AA737-D0006 FIDCN M-7539 9. Narrative Summary (Brief Description of Work P 1. The appropriate documents were reviewed t construction code. 2. Valve actuator mounting plate and valve	
FIDCN M-7539 9. Narrative Summary (Brief Description of Work P 1. The appropriate documents were reviewed t construction code. 2. Valve actuator mounting plate and valve	N. To enhance the reliability of the
<ol> <li>The appropriate documents were reviewed t construction code.</li> <li>Valve actuator mounting plate and valve</li> </ol>	· .
construction code.	erformed):
	• verify compliance with the applicable
10. Material Used: N/A. Material used is non int -	connet were drilled and doweled.
-	gral attachment/non code.
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NIS-2

# <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

1. Owner:	Southern California Edison Company 2244 Walnut Grove Ave.	Traveler: S01-90-032
	Rosemead, CA 91770	Unit: 1
2. Plant:	San Onofre Nuclear Generating Station P. O. Box 128, San Clemente, CA 92672	MMP: 1-3582.005N
3. Work Perfo	rmed by: Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	<b>CWO:</b> 90081311000

4. System Identification: Containment Recirculation Spray (CRS) P&ID: 5178120

5. (a) Applicable Construction Code: Valve (ASA B16.5, 1957 ED.) Code Classified X1-2

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition thru S'78, Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	  Manufacturer  Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
6ª Flow Control Ball Valve	Gulf-Western	5099	H/A	S1-CRS-CV-517	N/A	Replace	No
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							1

7. Work Description: MMP 1-3522.00SN. Valve Actuator Mounting Plate and Valve Bonnet were drilled and doweled

8. Tests Conducted: System Leakage None

ությունը, պա պատուն է ենչպեսնու 1991 երդ ենչ է է պա պա պատճանացնում է էլինքի պե պա է է է էլինչ պես ես է էրինչ է

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#### 9. Remarks:

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached) -

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI (Repair or Beplacement) Signed <u>and file constrate</u> <u>Orec. 27</u>, 19<u>90</u> (Owner or Owner's Designee) Title (Date)

## CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>. <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>9/22/90</u> to <u>1/2/9/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

nature Commissions <u>1862</u> <u>CA</u> (State or Province, National Board Inspector's Signature Date <u>40 min 2</u>, 19<u>91</u>

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

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# ASME Section XI Abstract Owner's Summary of Repair or Replacement

F 1.1

	Owner:	Southern L 2244 Walnu Rosemead,	alifornia Edison C t Grove Ave. ra 91770	ompany	Traveler: S01-90-033
		•		<b>.</b>	Unit: 1
2.	Plant:	San Onofre P. O. Box	Nuclear Generatin 128, San Clemente,	ng Station CA 92672	MMP 1-3582.00SN
8.	Work Perfor	med by:	Bechtel Construc P. O. Box 450 San Clemente, CA		<b>CWO:</b> 90081312000
<b>!</b> .	System Ider	ntification:	Containment Recir	culation Spray	(CRS) P&ID: 5178120
5.	Plant Tag N	Io.: S1-CRS-	CV-518	Serial No.:	5178120
5.	Component:	Flow Contro	1 Ball Valve N	lame: Gulf-West	ern Size: 6"
7.	Code: ASA-E	316.5, 1957	ED Class: X1-	2	
в.	Purpose (St	tatement of	Problem): MMP 1-3 valve c	582.00SN. To enh perator.	nance the reliability of the
	Associated		-AA737-D0006 IDCN M-7539		· · ·
).	Narrative S	Summary (Bri	ef Description of	Work Performed)	:
		ppropriate ( ruction cod		iewed to verify o	compliance with the applicab
	const	ruction cod	е.	-	compliance with the applicab
	const 2. Valvé	ruction cod	e. ounting plate and	valve bonnet we	
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	const 2. 'Valve . Material U	ruction cod	e. ounting plate and	valve bonnet we non integral at	re drilled and doweled.
.0	const 2. 'Valve . Material U	ruction cod actuator m Jsed: N/A.	e. ounting plate and Material used is	valve bonnet we non integral at	re drilled and doweled. tachment/non code.
1 <b>0</b>	const 2. 'Valve . Material U	ruction cod actuator m Jsed: N/A.	e. ounting plate and Material used is	valve bonnet we non integral at	re drilled and doweled. tachment/non code.
	const 2. 'Valve . Material U	ruction cod actuator m Jsed: N/A.	e. ounting plate and Material used is	valve bonnet we non integral at	re drilled and doweled. tachment/non code.

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	OWNER'S	REPORT	OF REP	AIR OF	R REPL	ACEME	NT	
As	Required by	the Pr	<u>ovision</u> :	s of A	ASME C	ode S	lection	XI

1. Owner:	2244 Waln	California Edison Company ut Grove Ave.	Traveler: S01-90-033
		CA 91770	Unit: 1
2. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	MMP: 1-3582.00SN
3. Work Perfo	ormed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO: 90081312000

4. System Identification: Containment Recirculation Spray (CRS) P&ID: 5178120

- 5. (a) Applicable Construction Code: Valve (ASA B16.5, 1957 ED.) Code Classified X1-2
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements:

1977 Edition Thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	Manufacturer Serial No.	National  Board No.	Other Identification	Year Built	Repaired  Replaced.or  Replacement	ASME Code Stamped Yes/No
6" Flow Control Ball Valve	Gulf-Vestern	5100	N/A	51-CRS-CV-518	N/A	     Replace	No
			·				
							1
			• 1				
<u> </u>							

7. Work Description: MMP 1-3582.00SN: Valve Actuator Mounting Plate and Valve Bonnet were drilled and doweled

8. Tests Conducted: System Leakage None

Page 2 of 2 3 GF

FORM NIS-2 (back)

#### 9. Remarks:

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI (Repair or Replacement)

(Owner or Owner's Designee) Title (Date) Signed and

# CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from 9/22/9 to 1/8/9/ and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

<u>Chikonsolon</u> Commissions <u>1862</u> <u>CA</u> Inspector's Signature (State or Province, National Board <u>мили 2, 1991</u>

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Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

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OWNER'S REPORT OF REPAIR	OR REPLACEMENT

进行标识 计未

		As Required by the Provisions of ASME							
						Speet 1	1 of 1		
L <b>.</b>	Owner:	vner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770		ASME	мо:	89120055			
		2244 \	Walnut Grove	Ave., Rosemead	4 CA 91//	Unita	1		
2 <b>.</b>	Plant:	San C P.O. I	)nofre Nuclear Box 128, San C	Generating Sta lemente, CA 9	tion 2674-0128	RS:	055-90	R2	
<ol> <li>Work Perfo</li> <li>System Ider</li> <li>(a) Approximation</li> </ol>			ned by: Sou	thern California	a Edison	P&ID:	5178020	) (C·9)	
			fication: Con	ntainment Recir	culation				
				tion Code: ASA	A B31.1 1955	Edition, Code Cl	assified >	I-2, Code Case	25:
(b) App Add									
	(0)	Appli Adde	cable Edition ( nda, Code Cas	of Section XI Ut es: None	ilized for R	epairs or Replace	ments: 1	977 Edition, S'I	78
б.		Adde	nda, Code Cas	of Section XI Ut es: None s Repaired or F		epairs or Replace	ments: 1	977 Edition, S'7	78
<b>5.</b>		Adde	nda, Code Cas	es: None		Cuber Identification	ments: 1 Year Built	P77 Edition, S' Repaired, Replaced, or Replacement	ASME Co Stampe
-	Identifie Name of	Adde: cation	nda, Code Cas of Component 	es: None s Repaired or F	Replaced:	Other	Yees	Repaired, Replaced, or	ASME Co Stampe
Expen 2" 30	Identifi Name of Component	Adde: cation	nda, Code Cas of Component Kame of Manufacturer Pathway	es: None s Repaired or R Menufacturer Seriel No.	Replaced: National Board No.	Other Identification S1-CRS-XJ-976	Year Built	Repaired, Replaced, or Replacement	ASME Co Stampe Yes/Ka
Empen 2" 30 Flang 5/8"	Identifi Name of Component Ision Bellow	Adde: cation	nda, Code Cas of Component Kame of Manufacturer Pathway	es: None s Repaired or F Menufacturer Seriel No. N/A Et. C3E1-90	Replaced: National Spard No. N/A	Cther Identification S1-CRS-XJ-576 RSO C295-90 SAIE2 F-3C4 RSO C381-90	Year Built N/A	Repaired, Replaced, or Replacement Replacement	ASME Co Stampe Yes/No
2" 30 Flang 5/8" Studs	Identifie Name of Component ssion Bellow 00# RF 30 (2) x 5 1/2"	Adde: cation	nda, Code Cas of Component Kame of Menufacturer Fathway Eub Inc.	es: None s Repaired or R Menufecturer Serial No. N/A Et. C3E1-90 Et. JJ-26	Replaced: National Board No. N/A N/A	Other Identification \$1-CRS-XJ-976 RSO C299-90 SALE2 F-304 RSO C381-90 Note 1 A-193 E7 RSO 0168-84	Year Built K/A	Repaired, Replaced, or Replacement Replacement Replacement	ASME Co Stampe Yes/Ko No

#### Work Description:

Expansion bellows had a through-wall leak. The bellows assembly and associated flanges were previously installed under DCP 3016.19PM without the required ASME Section XI/MO as documented on NCR SO1-P-7433. Replacement Code parts were verified as meeting the requirements of the original construction code. Welding was performed in accordance with WR1-90-096. PT examinations were performed on welds. VT-1 examination was performed on (temp attach) removal areas of replacement expansion bellows. A hydrostatic test and VT-2 examinations were performed. Reference: NCR SO1-P-7433

Note 1: Reference ME-90-007 for Code reconciliation of materials. Note 2: Reference ME-90-009 for Code reconciliation of materials.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] Pneumatic [] Other [] Pressure: 170 psig Temp: N/A °F

8.

7.

certify that the statements made in this report are content are content are interplacement) as of the ASME Code, Section XI. ed	(	(Applicable Manufacturer's Data Reports to be attached)
certify that the statements made in this report are correct and this <u>replacement</u> conforms to the as of the ASME Code, Section XI. (repair or replacement) ed <u>I M G</u> Supve. ASME Codes Engineer <u>5 Mov</u> 19 9 D (Owner or Owner's Designee) Title (Date) CERTIFICATE OF INSPECTION a, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel nspectors and the State or Province of <u>California</u> employed by <u>Arkwright Mutual Insurance Company</u> Factory Mutual System) of Norwood. Massachusetts have inspected the components described in this Owner's Deport during the period from <u>517790</u> to <u>117790</u> and state that to the best of ay knowledge and belief, this repair or replacement has been performéd in accordance with Section XI of the SME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his mployer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising rom or connected with this inspection. Mathematical Signature (State or Province, National Board)		
certify that the statements made in this report are content are content are interplacement) as of the ASME Code, Section XI. ed		CERTIFICATE OF COMPLIANCE
ed i <u>Marine</u> <u>Supvg. ASME Codes Engineer</u> <u>5 Nov</u> 1990 (Owner or Owner's Designee) Title (Date) CERTIFICATE OF INSPECTION a, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel nspectors and the State or Province of <u>California</u> employed by <u>Arkwright Mutual Insurance Company</u> <u>Factory Mutual System</u> ) of <u>Norwood Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>37790</u> to <u>117760</u> and state that to the best of any knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the <u>ISME Code. By signing this certificate</u> , neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his mployer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising rom or connected with this inspection. <u>Mathematican</u> Commissions <u>1862 California</u> Inspector's Signature (State or Province, National Board)	certify that the statements ma s of the ASME Code. Section	ade in this report are correct and this <u>replacement</u> conforms to the (repair or replacement)
(Owner or Owner's Designee) The CERTIFICATE OF INSPECTION CERTIFICATE OF INSPECTION the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel nspectors and the State or Province of <u>California</u> employed by <u>Arkwright Mutual Insurance Company</u> Factory Mutual System) of Norwood. Massachusetts have inspected the components described in this Owner's Report during the period from <u>3/7/90</u> to <u>1/1/7/90</u> and state that to the best of ny knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising rom or connected with this inspection. Mathematical Signature (State or Province, National Board)	ed , IA Man	Supvg. ASME Codes Engineer 5 Nov 1990
, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel nspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compary</u> <u>Factory Mutual System</u> ) of <u>Norwood. Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>37790</u> to <u>117790</u> and state that to the best of hy knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising rom or connected with this inspection. <u>Management</u> (State or Province, National Board)	(Owner or Owner's	Designee) little (Date)
Aspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Wultual Instituate Company</u> <u>Factory Mutual System</u> ) of <u>Norwood</u> . <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>3/7/90</u> to <u>11/7/60</u> and state that to the best of hy knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the SME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed r implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his mployer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising rom or connected with this inspection. <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>1816</u> <u>181</u>		CERTIFICATE OF INSPECTION
	Factory Mutual System) of <u>No</u> leport during the period from	$\frac{3790}{1000}$ to $\frac{1790}{1000}$ and state that to the best of
	or implied, concerning the repr mployer shall be liable in any prom or connected with this in	ertificate, neither the Inspector flor fils employer flakes any warranty, expressed air or replacement in this Report. Furthermore, neither the Inspector nor his manner for any personal injury or property damage or a loss of any kind arising spection. <u>Commissions</u> <u>ISI California</u> (State or Province, National Board)
e: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) ea sheet is numbered and the number of sheets is recorded at the top of this form.	r implied, concerning the reprint mployer shall be liable in any is from or connected with this in <i>Concernation of the concernation</i> of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second	ertificate, neither the Inspector nor his employer makes any warranty, expressed air or replacement in this Report. Furthermore, neither the Inspector nor his manner for any personal injury or property damage or a loss of any kind arising spection. <u>Commissions</u> <u>18/L California</u> (State or Province, National Board) 19 <u>90</u> the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in Items 1 through 4 on this data report is included on each sheet, and (3) ea
e: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) ea	r implied, concerning the reprint mployer shall be liable in any is from or connected with this in <u>Source 2000</u> Inspector's Signature	ertificate, neither the Inspector nor his employer makes any warranty, expressed air or replacement in this Report. Furthermore, neither the Inspector nor his manner for any personal injury or property damage or a loss of any kind arising spection. Commissions <u>ISUACalifornia</u> (State or Province, National Board) 19 <u>50</u> the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in Items 1 through 4 on this data report is included on each sheet, and (3) ea he number of sheets is recorded at the top of this form.

				Sheet 1	of 1	
. Owner:		wner: Southern California Edison Company		ASME	MO:	91030337
		2244 Walnut G	rove Ave., Rosemead, CA 91770	Unit:	1	·
2.	Plant:	San Onoíre Nu P.O. Box 128, S	clear Generating Station San Clemente, CA 92674-0128	RS:	063-91	
3.	Work I	Performed by:	Southern California Edison	P&ID:	5178600	) (C-1)
۱.	System	Identification:	Containment Ventilation			

# NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

- (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78
  - Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Control Valve	BS&B	N/A	N/A	S1-CVS-CV-40	N/A	Replaced	No
Pancake Flange	Allegheny Ludlum Steel	Ht. 845635	N/A	RSO 1363-90	N/A	Replacement	No

#### 7. Work Description:

A pancake blind flange was installed on the downstream side of the addressed valve between the existing piping system flange and the valve outlet flange. The replacement blind flange material was verified as being compatible with the installation and system requirements.

Reference: NCR 91030021

8.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [.] Other [X] N/A

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Ve ce ules c	rtify that the sta of the ASME C	atements ma ode, Section	de in this re		COMPLIAN ect and this (rep	replacer	nenteplacement)	conforms to the
Signed		or Owner's		Supvg. ASM	<u>ME Codes Engi</u> Title	neer	<u>4/3</u> (Date)	_19 <b>9</b> /
			CERTIF	ICATE OF	F INSPECTION	ON		
Ins (Fa Re) my AS or em	pectors and th actory Mutual S port during the knowledge and ME Code. By s implied, concer ployer shall be	e State or I <u>ystem</u> ) of <u>No</u> period from belief, this r igning this ce ning the rep liable in any	alid commiss Province of <u>o</u> <u>rwood, Mass</u> epair or replectificate, neit air or replace manner for a	ion issued by <u>California</u> , en <u>achusetts</u> have <u>6/9/</u> to acement has l her the Inspe- ement in this	the National E nployed by <u>Ark</u> inspected the c <u>04/07</u> been performed ctor nor his emp Report. Furthe	Board of <u>cwright 1</u> compone <u>////</u> in accor ployer ma ermore, 1	nts describe and state th dance with S akes any war neither the I	Pressure Vessel <u>rance Company</u> d in this Owner's that to the best of Section XI of the rranty, expressed inspector nor his any kind arising
Ins (Fa Rej my AS or em fro	pectors and th actory Mutual S port during the knowledge and ME Code. By s implied, concer ployer shall be m or connected	e State or I <u>ystem</u> ) of <u>No</u> period from belief, this r igning this ce ning the rep liable in any I with this in	alid commiss Province of <u>Grwood, Mass</u> <u>0340</u> epair or replace ertificate, neit air or replace manner for a spection.	ion issued by California, en achusetts have 6/9/ to accement has h her the Inspe- ement in this ny personal in ons $1860$	the National E nployed by <u>Ark</u> inspected the c <u>04/07</u> been performed ctor nor his emp Report. Furthe	Board of <u>compone</u> <u>191</u> in accor ployer ma ermore, n y damage	nts described and state the dance with S akes any war neither the I e or a loss of	d in this Owner's tat to the best of Section XI of the tranty, expressed inspector nor his

Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. Note: x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

			As Required by the Provisions of ASME Cod	Code Section XI			
		·		Sheet 1	of 1		
1.	Owner:	Southern Califo	ornia Edison Company	ASME	MO: 90101760		
		2244 Walnut G	rove Ave., Rosemead, CA 91770	Unit:	1		
2.	Plant:	San Onofre Nu P.O. Box 128,	iclear Generating Station San Clemente, CA 92674-0128	RS:	364-90		
3.	Work l	Performed by:	Southern California Edison	P&ID:	5178100-6		

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

4-21-2 Ma 194

- 4. System Identification: Fuel Handling
- 5. (a) Applicable Construction Code: ANSI B31.1, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Fuel Transfer Tube	B/A	R/A	N/A	S1-FES-XFER-TUBE	N/A		No
Studs (5)	Cardinal	Ht. Code D4	N/A	RSO 3467-90	N/A	Replacement	No
Nuts (10)	Cardinal	Ht. Code D3	N/A	RSO 3467-90	N/A	Replacement	No

#### 7. Work Description:

The bolting material consisting of five (5) studs and ten (10) nuts on the fuel transfer tube were damaged beyond repair and required replacement. The replacement studs (1 1/8" A193/B8 and nuts (1 1/8" A194/B) were verified to be in compliance with the original construction code requirements. A visual (VT-1) examination was conducted on the replacement bolting material with no relevant conditions noted.

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8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] N/A

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9. Remarks: A system pressure test will not be required because the more stringent 10CFR50 Appendix J testing is required per the Tech. Specs. These tests are two LLRT's; (seal test and transfer tube volume).

ules of the ASME Code, Section A. Survey ASME Codes Engineer 4/3 19.9/	We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the ules of the ASME Code, Section XI. (repair or replacement) Signed <u>Supver ASME Codes Engineer</u> <u>1/3</u> 19 9/ (Owner or Owner's Designee) Title (Date) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from <u>2/5/91</u> to <u>3/21/91</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> ( <u>Factory Mutual System</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from $2/5/91$ to $3/21/91$ and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. <u>Matrix All Shafan</u> Commissions <u>1574</u> <u>California</u> Inspector's Signature (State or Province, National Board)	I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from $2/5/91$ to $3/21/91$ and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.
	Inspector's organized

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 , , , , , , , ,	OWNER	'S REPORT OF REPAIR OR	REPLACEME	<u>NT</u>
:		As Required by the Provisions of ASME Cod		
			Sheet 1 of 1	
1.	Owner: Southern Califo 2244 Walnut G	ornia Edison Company rove Ave., Rosemead, CA 91770	ASME MO:	88022081
• • •			Unit: 1	
2.	Plant:San Onofre NuP.O. Box 128, \$	clear Generating Station San Clemente, CA 92674-0128	<b>RS:</b> 125-9	0
<b>3.</b>	Work Performed by:	Southern California Edison	<b>P&amp;ID:</b> 51780	)40
4.	System Identification:	Feedwater		

NIS-2

and Million & 5. Service (a) and Applicable Construction Code: ASA B31.1, 1955 Edition, M-18668, Code Classified XI-2, Code Cases: None

build state (b): (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

> ASME Code Stamped Yes/No No

> > No

No

No

	Name of	Name of	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	
¥"	Needle Valve	Edwards -	Mark #143	N/A	S1-FWS-339	N/A	Replaced	
<u>'</u>	Globe Valve	Kerotest .	APV2-17	N/A	RSO 0410-90	N/A	Replacement	
3"	Sch. 80 Pipe	Tioga	Bt. W70910	N/A	RSO 2300-88 SA-106, Gr B	N/A	Replacement	
¥"	Adaptor	Parker	Ht. HAMW	N/A	RSO 1537-90	N/A	Replacement	ſ

ation of Components Depaired on Peplaced.

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7. Work Description:

As a result of a design change, the existing needle valve, piping, and adaptor were replaced. The replacements were verified as complying with the original Construction Code requirements. The valve installed by welding. A VT-2 examination was conducted during the System Functional pressure test.

> References: FCN's: S5238M, S5270M and S5249M, WR1-90-247, WR1-90-493, and ME-90-043 . مەربەر . مەربەر a constant of the second states a system of the second second

8.

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 650 psig Temp: N/A

**Remarks**: None 9. (Applicable Manufacturer's Data Reports to be attached) CERTIFICATE OF COMPLIANCE We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the (repair or replacement) rules of the ASME Odde, Section XI. Supvg. ASME Codes Engineer & APRIL 199/ Title (Date) Signed Title (Owner or Owner's Designee) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's to 04/10/91 and state that to the best of Report during the period from 07/19/90 my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. Commissions 1864 California (State or Province, National Board) ector's Signature 10 19 9 Date Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

			As Required by the Provisions of ASME C	ode Section XI			
				Sheet 1	of 1		
1.	Owner:	Southern Califo	ASME	ASME MO: 91011984			
		2244 Walnut G	rove Ave., Rosemead, CA 91770	Unit:	1		
2.	Plant:	San Onofre Nu P.O. Box 128,	clear Generating Station San Clemente, CA 92674-0128	RS:	024-91	1	
3.	Work I	Performed by:	Southern California Edison	P&ID:	51782 51782		
4.	System	Identification:	Feedwater				
5.	(a)	Applicable Co None	nstruction Code: ASA B31.1, 1955 E	dition, Code C	lassifie	d XI-2, Code Cases:	
	(b)	Applicable Ed	ition of Section XI Utilized for Repa	irs or Replace	ments:	1977 Edition, S'78	

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

- (b) Applicable Edition of Section XI Offized for Repairs of Replacementer 2000 2000 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" Carbon Steel Piping	N/A	N/A	N/A	S1-FWS-341; 342; & 343-2"-EG	* N/A	Repaired	No

#### 7. Work Description:

8.

Indications (gouges, undercut and deposited weld metal) were detected by surface examination outside of the weld area on the addressed piping. A nonconformance report (NCR) was written to address this condition. The indications were removed, blended into the surrounding surface by grinding and buffing assuring a 3:1 taper.

A volumetric examination was performed using the straight beam UT method. Two readings were identified as below the minimum design requirements of the original construction code (ASA B31.1). The addressed NCR was revised (Rev.2) to document this condition. Calculations conducted on the area indicated the remaining wall thickness is inadequate for the addressed design condition (1250 psia/850°F). Per design change the design pressure/temp. of the blowdown line was reduced to 1000 psia/545F.

References: NCR 91010152, NDE Reports: 1MT-002-91, 1MT-006-91 thru 1MT-009-91, 1UT-014-91 thru 1UT-017-91, Design Calculation DC-2580, Supp H., and DCN ABG-3233.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: N/A psig Temp: N/A

Remarks: None			·	
	(Applicable Manufacturer's Data Repo	rts to be attached)		
· .	CERTIFICATE OF COM	MPLIANCE		
e certify that the statements makes of the ASME Code, Section	ade in this report are correct an XI.	d this <u>repair</u> (repair or r	conforms t eplacement)	o the
med ar Mendele	Supvg. ASME C	odes Engineer	6-9 19.91	
(Owner or Owner'	Designee) Ti		$\frac{6 - 3}{(Date)} \frac{19^{9/}}{}$	
	CERTIFICATE OF INS	SPECTION		
Section XI of the ASME Co any warranty, expressed or is neither the Inspector nor his damage or a loss of any kind	d belief, this repair or replacent de. By signing this certificate, r nplied, concerning the repair of employer shall be liable in an arising from or connected with	neither the Inspec or replacement in y manner for any this inspection.	tor nor his employer this Report. Further	makes rmore,
Al la con Den	Commissions <u>1962 C</u> (State or Provinc	California		
Inspector's Signature	(State or Provinc	z, National Board	1)	
Date	19 <u>91</u>			
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		As Required by the Provisions of ASME Cod	e Section XI		
			Sheet 1	ot 1	
•	Owner: Southern Calif	ornia Edison Company	ASME	MO:	89071853
	2244 Walnut C	Grove Ave., Rosemead, CA 91770	Unit:	1	
•	Plant: San Onofre N P.O. Box 128,	uclear Generating Station San Clemente, CA 92674-0128	RS:	143-90	)
	Work Performed by:	Southern California Edison	P&ID:	517820	06 (H-9)
•	System Identification:	Feedwater			

## NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

- (a) Applicable Construction Code: ANSI B16.34, 1977 Edition, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
	Atwood-Morrill	N/A	N/A	S1-FWS-345	N/A		No
10" Check Valve Disc	Atwood-Morrill	OBFE 2		RSO 3014-90 SA-216, Gr WCB	N/A	Replacement	No

#### 7. Work Description:

Per the address Facility Change Notices (FCN's), the existing check value disc was replaced by a modified check value disc with extended hammer to reduce fluttering and wear to shaft and bushing. The replacement disc was reconciled and verified as meeting the original construction code requirements.

References: FCN S-5392 & S-5394M (Rev. 2), ME-90-73

8.

5.

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Other [] Pressure: 640 psig Temp: N/A

9.	Remarks:	None	
			(Applicable Manufacturer's Data Reports to be attached)
			CERTIFICATE OF COMPLIANCE
We cer rules of	tify that the sta	tements m	ade in this report are correct and this <u>replacement</u> conforms to the n XI. (repair or replacement)
Signed_	(Owner	or Owner'	<u>Supvg. ASME Codes Engineer</u> <u>Z3 Apr.</u> <u>19 9</u> 's Designee) Title (Date)
	χ-		
			CERTIFICATE OF INSPECTION
Insp (Fac Rep my l ASN or in emp	ectors and the <u>story Mutual Sy</u> ort during the knowledge and IE Code. By sign pulied, concert	State or stem) of <u>N</u> period from belief, this gning this c ning the rej iable in any	valid commission issued by the National Board of Boiler and Pressure Vessel Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> orwood <u>Massachusetts</u> have inspected the components described in this Owner's in <u>7/19/90</u> to <u>44/28/91</u> and state that to the best of repair or replacement has been performed in accordance with Section XI of the certificate, neither the Inspector nor his employer makes any warranty, expressed pair or replacement in this Report. Furthermore, neither the Inspector nor his manner for any personal injury or property damage or a loss of any kind arising inspection.
Ins	<u>Moms</u> pector's Signati	oure .	Commissions <u>1862</u> <u>California</u> (State or Province, National Board)
Dat	april.	2.8,	19 <u>91</u>

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	OWNER	S REPORT OF REPAIR OR	REFLAC	CIVILIN	<u>+</u>	
		As Required by the Provisions of ASME Co	de Section XI			_
	<u> </u>		Sheet 1	of 1		-
1.	Owner: Southern Califor	nia Edison Company ove Ave., Rosemead, CA 91770	ASME	MO:	89071854	
		ove Ave., Rosemeau, CA 91770	Unit:	1		
2.		lear Generating Station an Clemente, CA 92674-0128	RS:	144-90		
3.	Work Performed by:	Southern California Edison	P&ID:	517820	6	
4.	System Identification:	Feedwater				

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

- (a) Applicable Construction Code: ANSI B16.34, 1977 Edition, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

		e of ponent		Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
10"	Check	Valve		Atwood-Morrill	N/A	N/A	51-FWS-346	N/A		No
10"	Check	Valve	Disc	Atwood-Morrill	OBFE3		RSO 3014-90 SA-216, Gr WCB	N/A	Replacement	No

7. Work Description:

5.

Per the address Facility Change Notices (FCN's), the existing check valve disc was replaced by a modified check valve disc with an extended hammer to reduce fluttering and wear to the shaft and bushing. The replacement disc was reconciled and verified as meeting the original construction code requirements. A 9/32" diameter thru-hole was drilled thru the disc to meet drawing using previously place disc as a "template".

References: FCN's S-5392M and S-5394M, ME-90-074

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 700 psig Temp: N/A

9.	Remarks: None	
·	(Applicable Manufacturer's Data Reports to be at	tached)
	CERTIFICATE OF COMPLIA	NCE
We cer rules o	s of the Arstitle Code, section 12.	pan of replacement)
Signed	ed <u>Supvg. ASME Codes Eng</u> (Owner or Owner's Designee) Title	<u>ineer Z5 Apr. 199</u> (Date)
	CERTIFICATE OF INSPECT	ON
Ins	, the undersigned holding a valid commission issued by the National nspectors and the State or Province of <u>California</u> , employed by <u>Au</u> <u>Factory Mutual System</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the	components described in this Owner's
Re	Report during the period from <u>11/04/40</u> to <u>04/2/19</u>	d in accordance with Section XI of the
AS	ASME Code. By signing this certificate, neither the Inspector for his en	ermore, neither the Inspector nor his
em fro	employer shall be liable in any manner for any personal injury or proper rom or connected with this inspection.	
	Inspector's Signature Commissions /564 California (State or Province, Nation	nal Board)
		· · · · ·
Da	Date April 27 1991	
	V	<u></u>

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

		As Required by the Provisions of ASME Cod	ie Section XI	. •
			Sheet 1 of 1	
1.	Owner: Southern Calif	ornia Edison Company	ASME MO: 85090099	
	2244 Walnut C	Grove Ave., Rosemead, CA 91770	Unit: 1	
2.	Plant: San Onofre N P.O. Box 128,	uclear Generating Station San Clemente, CA 92674-0128	RS: 427-89	
3.	Work Performed by:	Southern California Edison	P&ID: 5178206	
4.	System Identification:	Feedwater		
5.	(a) Applicable Co Classified XI-	nstruction Code: Rockwell Standard D 2, Code Cases: None	Design Specification SA-499424, Code	

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

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- (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" Check Valve	Rockwell- Edwards	N/A	N/A	S1-FWS-371	N/A		No
Valve Disc	Rockwell International	39 Lot. 14496 Part# 1611424	N/A	RSO 1575-89 ASTM-A-565-85 Grade 616	N/A	Replacement	No

7. Work Description:

Valve leaked through seat. The valve disc was replaced and reconciled with the original construction code requirements. A VT-2 examination was conducted during a system pressure test with no leakage noted.

Reference: CR-88-008

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 780 psig Temp: N/A

	nufacturer's Data Reports to be attached)		
<u>CERTIFI</u> e certify that the statements made in this rep	CATE OF COMPLIANCE	ment conform	ns to the
les of the ASME Code, Section XI.	(repair or r	eplacement)	
med_ al Mindele-	Supvg. ASME Codes Engineer	6/6 199!	
(Owner or Owner's Designee)	Title	(Date)	
I, the undersigned holding a valid commiss	sion issued by the National Board of	Boiler and Pressure	Vessel
Inspectors and the State or Province of $(\underline{Factory Mutual System})$ of Norwood, Mass Report during the period from $\underline{/2//0/}$ my knowledge and belief, this repair or replaced ASME Code. By signing this certificate, neith or implied, concerning the repair or replaced employer shall be liable in any manner for a	<u>California</u> , employed by <u>Arkwright</u> <u>achusetts</u> have inspected the compone $\underline{90}$ to <u><math>6/7/9/</math> accement has been performed in accor- ther the Inspector nor his employer m ement in this Report. Furthermore,</u>	Mutual Insurance C ents described in this ( and state that to the rdance with Section X akes any warranty, ex neither the Inspector	Owner's best of I of the pressed nor his
Inspectors and the State or Province of $(\underline{Factory Mutual System})$ of Norwood, Massi- Report during the period from $\underline{/2//0/}$ my knowledge and belief, this repair or repla- ASME Code. By signing this certificate, neit or implied, concerning the repair or replace employer shall be liable in any manner for a from or connected with this inspection.	<u>California</u> , employed by <u>Arkwright</u> <u>achusetts</u> have inspected the compone <u>90</u> to <u>6/7/9/</u> accement has been performed in accou- ther the Inspector nor his employer m ement in this Report. Furthermore, ny personal injury or property damag	Mutual Insurance C ents described in this ( and state that to the rdance with Section X akes any warranty, ex neither the Inspector	Owner's best of I of the pressed nor his
Inspectors and the State or Province of $(\underline{Factory Mutual System})$ of Norwood, Massi- Report during the period from $\underline{/2//0/}$ my knowledge and belief, this repair or repla- ASME Code. By signing this certificate, neit or implied, concerning the repair or replace employer shall be liable in any manner for a from or connected with this inspection.	<u>California</u> , employed by <u>Arkwright</u> <u>achusetts</u> have inspected the compone $\underline{90}$ to <u><math>6/7/9/</math> accement has been performed in accor- ther the Inspector nor his employer m ement in this Report. Furthermore,</u>	Mutual Insurance C ents described in this ( and state that to the rdance with Section X akes any warranty, ex neither the Inspector e or a loss of any kind	Owner's best of I of the pressed nor his

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

# ASME SECTION XI ABSTRACT OWNER'S SUMMARY OF REPAIR OR REPLACEMENT

1.	Owner:			ornia Edison Compa rove Ave., Roseme	•		ASME	MO:	88090096
2.	Plant:			clear Generating St	·		Unit:	1	
				an Clemente, CA			RS:	274-90	
3.	Work P	erforme	d by:	Southern Californ	nia Edison		P&ID:	5178206	5
4.	System	Identifie	cation:	Main Feedwater					
5.	Plant T	'ag No.:	S1-FW	S-373	Serial No.:	N/A			
6.	Compo	nent:	Globe	Valve	Name:	Rockwe Interna		Siz	e: 2"
7.	Code:	ASME	Section	ш	Class:	XI-2			
8.	Purpos	e (Stater	nent of	Problem):					

The valve was damaged beyond repair and requires replacement.

#### 9. Narrative Summary (Brief Description of Work Performed):

The replacement valve, built to ASME III, Class 3, W77, was verified to be in compliance with the original construction code as reconciled by SCE Material Reconciliation Report ME-90-051. Installation of the replacement valve was performed by welding in accordance with SCE Weld Record WR1-90-558. A satisfactory VT-2 examination was conducted in conjunction with a system hydrostatic pressure test at 1720 psig/68 °F with no leakage noted.

10. Material Used:

2" 600# Globe Valve

Prepared By: <u>K.L. Collins</u>

Date: March 8, 1991

		As Required by the Provisions of ASME Cod	e Section XI	
			Sheet 1	1 of 1
l.		fornia Edison Company Grove Ave., Rosemead, CA 91770	ASME	MO: 88090096
	2244 Wallut C		Unit:	1
2.		uclear Generating Station San Clemente, CA 92674-0128	RS:	274-90
3.	Work Performed by:	Southern California Edison	P&ID:	5178206
4.	System Identification:	Main Feedwater		

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

5. (a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified: XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

#### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" 600# Globe Valve	Rockwell International	N/A	. N/A	S1-FWS-373	N/A	Replaced	No
2" 600¢ Globe Valve	Rockwell International	AW547	N/A	RSO 2275-90 ME-90-051	N/A	Replacement	Yes

#### 7. Work Description:

8.

The valve was damaged beyond repair and required replacement. The replacement valve, built to ASME III, Class 3, W'77, was verified to be in compliance with the original construction code as reconciled by SCE Material Reconciliation Report ME-90-051. Installation of the replacement valve was performed by welding in accordance with SCE Weld Record WR1-90-558. A satisfactory VT-2 examination was conducted in conjunction with a system hydrostatic pressure test at 1720 psig/68 °F with no leakage noted.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] Pneumatic [] Other [] Pressure: 1720 psig Temp: 68 °F

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			(Applicable M	anufacturer's Da				
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nspector: Factory I	s and the <u>Mutual Svs</u>	State or tem) of N	valid commi Province of Jorwood, Mas	ssion issued b <u>California</u> , e <u>sachusetts</u> hav 2 8 /90 t	y the Nation mployed by we inspected	al Board <u>Arkwrigh</u> the compo 2/9/	nents describ and state	ed in this Owner's that to the best o
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Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. Note: x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	NIS-2	
OWNER'S REPORT	OF REPAIR	OR REPLACEMENT

		As Required by the Provisions of ASME Cod	e Section XI		
			Sheet 1	ot 1	
1.	Owner: Southern Califo	ornia Edison Company	ASME	MO:	90060430
	2244 Walnut G	rove Ave., Rosemead, CA 91770	Unit:	1	
2.	Plant: San Onofre Nu P.O. Box 128, S	clear Generating Station San Clemente, CA 92674-0128	RS:	377-90	I
3.	Work Performed by:	Southern California Edison	P&ID:	517820	06
4.	System Identification:	Feedwater .			

- 5. (a) Applicable Construction Code: ASME Section I, 1962 Edition (System); Manufacturer's Standard (Valve), Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
4" Gate Valve	Pacific	65421	N/A	51-FWS-376	N/A		No
Valve Disc	Pacific	N/A	N/A	S1-FWS-376	N/A	Repaired	No

#### 7. Work Description:

8.

The gate (wedge) disc required resurfacing on both sides. The "old" hard facing (stellite) was removed to the base material. Cracks were observed in the first attempt to apply hardfacing. The hardfacing was again removed, including some base material. A weld repair of the base material was performed and hardfacing was again applied. Linear indications detected by a PT examination were removed by grinding and blending into the surrounding surface. A satisfactory PT examination was conducted with no relevant indications noted. Final machining was performed. Disc and seat were lapped and had satisfactory blue check.

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#### References: NCR 91010024, WR1-90-798, WR1-90-805, WR1-90-843

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Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other []

Pressure: 650 psig Temp: N/A

		(4)	
		(ന)	pplicable Manufacturer's Data Reports to be attached)
	•		
		C	CERTIFICATE OF COMPLIANCE
		_	
ve ce	ertify that the st of the ASME C	lode. Section X	e in this report are correct and this <u>repair</u> conforms to the (repair or replacement)
igne	LA b	r or Owner's E	<u>Supvg. ASME Codes Engineer</u> 9 May 1991
	(Owne		
			CERTIFICATE OF INSPECTION
HER HAOEL WIT	spectors and the Factory Mutual S eport during the y knowledge and SME Code. By s implied, concern on or connecter on or connecter hspector's Signa	the State or Pro- <u>System</u> ) of <u>Norv</u> e period from d belief, this rej signing this cert rning the repair liable in any m d with this insp <u>Social</u> ature	Commissions <u>1864</u> <u>California</u> (State or Province, National Board)
Г	Date May	1 9	19 <u>91</u>
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Note	<b>_</b> •		e form of lists, sketches, or drawings may be used provided (1) size is 8-1/2

sheet is numbered and the number of sheets is recorded at the top of this form.

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2.4. 1.13

	OWNER'S REPORT OF REPA	IR OR REPLACEMENT
	As Required by the Provisions of A	ASME Code Section XI
		Sheet 1 of 1
1.	Owner: Southern California Edison Company	ASME MO: \$8090100
	2244 Walnut Grove Ave., Rosemead, CA 91	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-012	23 RS: 481-89
3.	Work Performed by: Southern California Edison	<b>P&amp;ID:</b> 5178206
4.	System Identification: Feedwater	
5.	(a) Applicable Construction Code: Rockwell St XI-2, Code Cases: None	andard Design Spec. SA-499424, Code Classified
	(b) Applicable Edition of Section XI Utilized for Addenda, Code Cases: None	or Repairs or Replacements: 1977 Edition, S'78

6. Identification of Components Repaired or Replaced:

Name of	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Component 2" Check Valve	Rockwell- Edwards	N/A		S1-FWS-386	N/A		No
2" Disc	Rockwell International	42 Lot. 14496		RSO 1575-89 ASTM-A-565-85 Grade 616	1989	Replacement	No

7. Work Description:

The valve disc required replacement. Leakage was discovered across valve seat. The valve disc was replaced. The replacement was reconciled with the original construction code requirements. A VT-2 examination was conducted during a system pressure test with no leakage noted.

Reference: CR-88-008

*.* . .

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 780 psig Temp: N/A

ter i construction and configuration as a sub-

	(Applicable	e Manufacturer's D	ata Reports to be alla	iched)	
	(** <b>P</b> P====		•		
	*				
	<u>CERT</u>	<u>'IFICATE OI</u>	F COMPLIAN	CE	
We certify that the c	tatements made in thi	is report are cor	rect and this	replacement	conforms to the
rules of the ASME C	Tode Section XI.		(rep	air or replacement)	) .
				. /(	•
Signed	Alaile la _	Supvg. AS	SME Codes Engi	neer 6/6	19 <u>_9/</u>
	er or Owner's Designe		Title	neer <u>6/6</u> (Date)	
(0#10		/			
	CER	TIFICATE C	F INSPECTION	JN	
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(The stars) Musical C	Suntan) of Norwood N	Maccachnicetts ha	ive inspected life c	OUDOHERRS RESERVE	
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	d haliaf this rangis or	replacement ha	s been performed	in accordance with	Section VI or me
	signing this certificate	neither the Inst	nector flor his child	MOVEL MAKES any wa	manty, expressed
an implied append	ming the remain or re	placement in the	is Report. Furthe	rmore, neimer me	mspector nor ms
employer shall be	liable in any manner	for any personal	• •	y damage or a loss o	f any kind arising
employer shan be			injury or property		
from or connecte	d with this inspection		injury or property	-	
from or connecte	d with this inspection		injury or propert	-	
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Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each Note: sheet is numbered and the number of sheets is recorded at the top of this form. •

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## ASME SECTION XI ABSTRACT OWNER'S SUMMARY OF REPAIR OR REPLACEMENT

1.	Owner:	Souther	n Califo	rnia Edison Comp	any		ASME	MO:	88090097	
		2244 W	alnut G	ove Ave., Roseme	ad, CA 91770		Unit:	1		
2.	Plant:	San On P.O. Bo	ofre Nu ox 128, S	clear Generating S an Clemente, CA	station 92674-0128		RS:	275-90		
3.	Work P	erforme	d by:	Southern Califor	nia Edison		P&ID:	5178206	5	
4.	System	Identifie	cation:	Main Feedwater						
5.	Plant T	ag No.:	S1-FW	S-388	Serial No.:	N/A				
6.	Сотро	nent:	Globe	Valve	Name:	Rockwe Interna		Siz	e: 2	•
7.	Code:	ASA B	31.1, 19:	55 Edition	Class:	XI-2				
8	Durnos	(States	ment of	Problem):						

The valve was inspected and found to be damaged beyond repair.

### 9. Narrative Summary (Brief Description of Work Performed):

The replacement valve was verified to be in compliance with the original code as reconciled by SCE Material Evaluation Report ME-90-052. Installation of the replacement valve was performed by welding in accordance with SCE Weld Record WR1-90-559. A VT-2 examination was conducted in conjunction with a system hydrostatic pressure test at 1720 psig/68 °F.

10. Material Used:

2" 600# Globe Valve

 Prepared By: <u>K.L. Collins</u>	Date: <u>March 8, 1991</u>
	• •

		As Required by the Provisions of ASME	Code Section XI
			Sheet 1 of 1
1.	Owner	Southern California Edison Company	ASME MO: 88090097
		2244 Walnut Grove Ave., Rosemead, CA 91770	Unit: 1
2.	Plant:	San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	RS: 275-90
3.	Work I	Performed by: Southern California Edison	<b>P&amp;ID:</b> 5178206
4.	System	Identification: Main Feedwater	
5.	(a)	Applicable Construction Code: ASA B31.1 1955 I Code Cases: None	Edition, Code Classified XI-2,
	(b)	Applicable Edition of Section XI Utilized for Rep Addenda, Code Cases: None	airs or Replacements: 1977 Edition, S'78

6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Cther Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" 600¢ Globe Valve	Rockwell International	N/A	N/A	S1-FWS-368	N/A	Replaced	30
2" 600¢ Globe Valve	Rockwell International	AW-546	. N/A	PSO 2275-90 ME-90-052	1977	Replacement	Yes (N)

#### 7. Work Description:

The valve was inspected and found to be damaged beyond repair. The replacement valve was verified to be in compliance with the original code as reconciled by SCE Material Evaluation Report ME-90-052. Installation of the replacement valve was performed by welding in accordance with SCE Weld Record WR1-90-559. A VT-2 examination was conducted in conjunction with a system hydrostatic pressure test.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] Pneumatic [] Other [] of a constant of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmission of the transmissio

9.	Remarks:	None
		(Applicable Manufacturer's Data Reports to be attached)
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		CERTIFICATE OF COMPLIANCE
We cer rules c	rtify that the st f the ASME C	ements made in this report are correct and this <u>replacement</u> conforms to the (repair or replacement)
Signed	NNN	<u>Supvg. ASME Codes Engineer</u> <u>11 March</u> 19 <u>9</u> Title (Date)
	(0%10)	
	<u></u>	
		CERTIFICATE OF INSPECTION
Ins (Fa Re my AS or em	pectors and th ctory Mutual S port during the knowledge and ME Code. By s implied, concer ployer shall be	holding a valid commission issued by the National Board of Boiler and Pressure Vessel State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> tem) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's eriod from <u>O 9/28/90</u> to <u>O 3/12/9/</u> and state that to the best of elief, this repair or replacement has been performed in accordance with Section XI of the ning this certificate, neither the Inspector nor his employer makes any warranty, expressed ng the repair or replacement in this Report. Furthermore, neither the Inspector nor his ible in any manner for any personal injury or property damage or a loss of any kind arising with this inspection.
5	Zer	eccloset commissions 1864 California
	spector's Signa	(State or Province, National Board)
Da	10 March	12 19 9/
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	OWNER'S	REPORT OF REPAIR OR	REPLACEMENT
		As Required by the Provisions of ASME Coo	Sheet 1 of 1
1.	Owner: Southern Califor	nia Edison Company	ASME MO: 89071855
	2244 Walnut Gro	ove Ave., Rosemead, CA 91770	Unit: 1
2.	Plant: San Onofre Nuc P.O. Box 128, Sa	lear Generating Station an Clemente, CA 92674-0128	RS: 145-90
3.	Work Performed by:	Southern California Edison	P&ID: 5178206 (B-9)
4.	System Identification:	Feedwater	
5.	(a) Applicable Cons Code Cases: N	struction Code: ANSI B16.34, 1977 Hone	Edition, Code Classified XI-2,
	(b) Applicable Edit	ion of Section XI Utilized for Repair	rs or Replacements: 1977 Edition, S'78

- Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
10" Check Valve	Atwood-Morrill	N/A	N/A	S1-FWS-398	N/A		No
10" Disc	Atwood-Morrill	OBFH 4	N/A	RSO 3014-90	N/A	Replacement	No

7. Work Description:

Excessive wear was noted on the bushing and valve shaft caused by valve disc fluttering. Facility change notices (FCN's) were issued to modify the valve to reduce fluttering. A replacement disc was installed and verified to be compatible with the original construction code requirements. Installation of the valve disc required drilling new dowel holes to properly align the shaft and disc.

References: NCR 90080227, FCN S-5392M, FCN S-5394M Rev. 2, ME-90-074

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Tests Conducted: System Leakage [.] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Societies Administration of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s

9. Remarks: None	
· · · · · · · · · · · · · · · · · · ·	(Applicable Manufacturer's Data Reports to be attached)
•	
	CERTIFICATE OF COMPLIANCE
We certify that the statements r rules of the ASME Code, Section Signed (Owner or Owner)	<u>Supvg. ASME Codes Engineer</u> 23 April 19 91
Inspectors and the State or <u>(Factory Mutual System)</u> of <u>1</u> Report during the period from my knowledge and belief, this ASME Code. By signing this or implied concerning the re-	s repair or replacement has been performed in accordance with Section XI of the certificate, neither the Inspector nor his employer makes any warranty, expressed epair or replacement in this Report. Furthermore, neither the Inspector nor his y manner for any personal injury or property damage or a loss of any kind arising

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	OWNER	As Required by the Provisions of ASME Cod		EMEN	T	
			Sheet	1 of 1		-
1.	Owner: Southern Califo 2244 Walnut G	ornia Edison Company rove Ave., Rosemead, CA 91770	ASME	MO:	88090101	
2.	_	clear Generating Station	Unit:	1		
	P.O. Box 128, 9	San Clemente, CA 92674-0128	RS:	482-89	1	
3.	Work Performed by:	Southern California Edison	P&ID:	517820	6	
4.	System Identification:	Feedwater				

- (a) Applicable Construction Code: Rockwell Standard Design Spec. SA-499424, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" Check Valve	Rockwell- Edwards	N/A	N/A	51-FWS-410	N/A		No
Valve Disc	Rockwell- International	41 Et. 14496 Part# 1611424	N/A	RSO 1575-89 ASTM-A-565-85 Grade 616	1989	Replacement	No

7. Work Description:

Valve leaked across seat. The valve disc was replaced and reconciled with the original construction code requirements. A VT-2 examination was conducted during a system pressure test.

Reference: CR-88-008

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5.

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] A second and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second seco

	Remarks:	None	
		(Applicable Manufacturer's Data Reports to be attached)	
		CERTIFICATE OF COMPLIANCE	
Ve ce	rtify that the st	ements made in this report are correct and this <u>replacement</u> conforms	s to the
	of the ASME C	Supres ASME Codes Engineer 6/6 1991 Title (Date)	
igned		or Owner's Designee) Title (Date)	
		CERTIFICATE OF INSPECTION	
Ins (Fi Re my AS or	pectors and the actory Mutual S port during the knowledge and ME Code. By s implied, concer- aployer shall be	solding a valid commission issued by the National Board of Boiler and Pressure State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Contem</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Oreriod from $1/1/7/9/7$ to $6/7/9/1$ and state that to the belief, this repair or replacement has been performed in accordance with Section XI ming this certificate, neither the Inspector nor his employer makes any warranty, exping the repair or replacement in this Report. Furthermore, neither the Inspector nor belief in any manner for any personal injury or property damage or a loss of any kind with this inspection.	wner's best of of the ressed hor his
	ADIL	121 6 Commissions 1862 California	
Ŀ	spector's Signa	Commissions <u>1862 California</u> (State or Province, National Board)	

i ner a let Ze Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

## ASME SECTION XI ABSTRACT OWNER'S SUMMARY OF REPAIR OR REPLACEMENT

1.	1. Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770					ASME	MO:	8809009	18	
							Unit:	1		
2.	Plant:	San On P.O. Bo	ofre Nu ox 128, S	clear Generating S an Clemente, CA	Station 92674-0128		RS:	276-90	Rev. 1	
3.	Work H	Performe	d by:	Southern Califor	nia Edison		P&ID:	5178200	5	
4.	System	Identifi	cation:	Main Feedwater						
5.	Plant 7	ag No.:	S1-FW	S-412	Serial No.:	N/A				
6.	Сотро	nent:	Globe	Valve	Name:	Rockwel Edward	1-	Siz	e:	2"
7.	Code:	ASA B	31.1, 195	55 Edition	Class:	XI-2				
8.	Purpos	e (State	ment of	Problem):						

Valve is damaged beyond repair and requires replacement.

#### 9. Narrative Summary (Brief Description of Work Performed):

The replacement valve was verified to be in compliance with the original construction code as reconciled by SCE material evaluation ME-90-053. Installation of the replacement valve was performed by welding in accordance with SCE approved Weld Record WR1-90-560. A VT-2 examination was conducted in conjunction with a system hydrostatic pressure test at 1720 psig at 68 °F, with no leakage noted.

10. Material Used:

Globe Valve

Prepared By: <u>K.L. Collins</u>

Date: March 8, 1991

	As Required by the Provisions of ASME Code	
		Sheet 1 of 1
1.	Owner: Southern California Edison Company 2244 Walnut Grove Avc., Rosemead, CA 91770	ASME MO: \$\$090098
	2244 Walkut Olove Ave., Rosenlead, err 51776	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	RS: 276-90 Rev. 1
3.	Work Performed by: Southern California Edison	P&ID: 5178206
4.	System Identification: Main Feedwater	

(a) Applicable Construction Code: ASA B31.1-1955, Code Classified XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	'Year Built	Repaired, Replaced, or Replacement	A3ME Code Stamped Yes/No
2" 60C# Globe Valve	Rockwell- Edward	N/A	N/A	S1-F#S-412	· N/A	Replaced	Xo
2" 600# Globe Valve	Rockwell International	AW551	N/A	RSO 2275-90	1977	Replacement	Yes

#### 7. Work Description:

The valve was damaged beyond repair and required replacement. The replacement valve was verified to be in compliance with the original construction code as reconciled by SCE material evaluation ME-90-053. Installation of the replacement valve was performed by welding in accordance with SCE approved Weld Record WR1-90-560. A VT-2 examination was conducted in conjunction with a system hydrostatic pressure test with no leakage noted.

8.

5.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] Pneumatic [] Other [] - Bernard and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structure and Antalastic Structu

9.	Remarks: None
	(Applicable Manufacturer's Data Reports to be attached)
	CERTIFICATE OF COMPLIANCE
We ce rules c	ortify that the statements made in this report are correct and this <u>replacement</u> conforms to the (repair or replacement)
Signed	(Owner or Owner's Designee) Supvg. ASME Codes Engineer 11 March 19.9/ Title (Date)
	CERTIFICATE OF INSPECTION
Ins (Fi Re my AS or em	the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel spectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> <u>actory Mutual System</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's eport during the period from <u>09/28/90</u> to <u>03/12/9/</u> and state that to the best of y knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the SME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his epoloyer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising of or connected with this inspection.
	Aspector's Signature (State or Province, National Board)
Da	ate March 12 19 91

Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. Note: x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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## OWNER'S REPORT OF REPAIR OR REPLACEMENT

		As Required by the Provisions of ASME Co	de Section XI			·
			Sheet 1	of 1		1
1.	Owner: Southern Califo		ASME	MO:	89071851	
	2244 Walnut Gi	244 Walnut Grove Ave., Rosemead, CA 91770		1		
2.	Plant: San Onofre Nuc P.O. Box 128, S	clear Generating Station an Clemente, CA 92674-0128	RS:	141-90		
3.	Work Performed by:	Southern California Edison	P&ID:	518205	(C-5)	
4.	System Identification:	Feedwater		. •	• .	

(a) Applicable Construction Code: ANSI B16.34, 1977 Edition, Code Classified XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

#### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year, Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
12" Check Valve	Atwood-Morrill	N/A	N/A	S1-FWS-438	N/A		No
Check Valve Disc	Atwood-Morrill	Et. 24290 Serial No. 3	N/A	RSO 3339-90	N/A	Replacement	No

#### 7. Work Description:

Excessive wear was noted on bushing and valve shaft. Per the addressed FCN, the existing valve disc was replaced by a modified valve disc with an extended hammer to minimize fluttering which caused wear to shaft and bushing. The replacement valve disc was verified to be in compliance with the original construction code requirements.

Reference: S5393M & S3594M (Rev. 3), ME-90-076, NCR 90080227

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Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] and a method of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state

9.	Remarks:	None	
			(Applicable Manufacturer's Data Reports to be attached)
	· ·		
			CERTIFICATE OF COMPLIANCE
We cer rules of	tify that the st	atements m Code, Sectio	
Signed_	(Owne	r or Owner	Supvg. ASME Codes Engineer 23 April 199 's Designee) Title (Date)
	·		
			CERTIFICATE OF INSPECTION
Insr (Fac Rep my) ASM or in emp fron	ectors and th <u>story Mutual S</u> ort during the knowledge and AE Code. By s mulied, concer-	te State or <u>ystem</u> ) of <u>N</u> period from d belief, this signing this of rning the re liable in any d with this if <u>1.5Uten</u>	repair or replacement has been performed in accordance with Section XI of the certificate, neither the Inspector nor his employer makes any warranty, expressed pair or replacement in this Report. Furthermore, neither the Inspector nor his y manner for any personal injury or property damage or a loss of any kind arising
	1		
Dat	e April	24	19_91

Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. Note: x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

NIS-2

## OWNER'S REPORT OF REPAIR OR REPLACEME

	As Required by the Provisions of ASME Code	Section XI Sheet 1 of 1
1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	ASME MO: 89071852
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	Unit: 1 RS: 142-90
3. 4.	Work Performed by: Southern California Edison System Identification: Feedwater	P&ID: 5178205 (C-5)
4.	System Identification: Feedwater	

- 5. (a) Applicable Construction Code: ANSI B16.34, 1977 Edition, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

## 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
	Atwood-Morrill	15487-02	N/A	S1-FWS-349	N/A		No
12" Check Valve Disc	Atwood-Morrill	24290-1	N/A	RSO 3339-90 SA-216, Gr WCB	N/A	Replacement	No

#### 7. Work Description:

Per the address Facility Change Notices (FCN's), the existing check valve disc was replaced by a modified check valve disc with an extended hammer to reduce fluttering and wear to the shaft and bushing. The replacement disc was reconciled and verified as meeting the original construction code requirements. A 9/32<sup>a</sup> diameter thru-hole was drilled thru the disc to meet drawing using previously place disc as a "template".

#### References: FCN S-5393M & S-5394M (Rev.3), ME-90-77

8.

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 1200 psig Temp: N/A

rules of the ASME Code, Section XI. Signed A A A A A A A A A A A A A A A A A A A		9. Remarks: None
We certify that the statements made in this report are correct and this <u>replacement</u> conforms to rules of the ASME Code, Section XI. (repair or replacement) Signed <u>Supvg. ASME Codes Engineer</u> <u>30 April</u> 19 9 ( (Owner or Owner's Designee) Title (Date) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vess Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compa</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owne Report during the period from <u>7/25/90</u> to <u>4/30/91</u> and state that to the best my knowledge and belief this repair or replacement has been performed in accordance with Section XI of t		(Applicable Manufacturer's Data Reports to be attached)
We certify that the statements made in this report are correct and this <u>replacement</u> conforms to rules of the ASME Gode, Section XI. (repair or replacement) Signed <u>Supvg. ASME Codes Engineer</u> <u>30 April</u> 19 9 ( (Owner or Owner's Designee) Title (Date) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vess Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compa</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owne Report during the period from <u>7/25/90</u> to <u>4/30/9/</u> and state that to the best my knowledge and belief this repair or replacement has been performed in accordance with Section XI of t		
We certify that the statements made in this report are correct and this <u>replacement</u> conforms to rules of the ASME Code, Section XI. (repair or replacement) Signed <u>Supvg. ASME Codes Engineer</u> <u>30 April</u> 19 9 ( (Owner or Owner's Designee) Title (Date) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vess Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compa</u> (Factory Mutual System) of <u>Norwood, Massachusetts</u> have inspected the components described in this Owne Report during the period from <u>7/25/90</u> to <u>4/30/9/</u> and state that to the best my knowledge and belief this repair or replacement has been performed in accordance with Section XI of t		
rules of the ASME Code, Section XI. Signed A A A A A A A A A A A A A A A A A A A		CERTIFICATE OF COMPLIANCE
Signed <u>Supvg. ASME Codes Engineer</u> <u>30 April</u> 19.9 ( (Owner or Owner's Designee) Title (Date) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vess Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compa</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owne Report during the period from <u>7/25/90</u> to <u>4/30/9/</u> and state that to the best my knowledge and belief this remaif or repracement has been performed in accordance with Section XI of t	the	
CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vess Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compa</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owne Report during the period from $7/25/90$ to $4/30/91$ and state that to the best my knowledge and belief this remain or remacement has been performed in accordance with Section XI of t		Signed ALAL Supvg. ASME Codes Engineer 30 April 199 (
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vess Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compa</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owne Report during the period from <u>7/25/90</u> to <u>4/30/91</u> and state that to the best my knowledge and belief, this remain or replacement has been performed in accordance with Section XI of t		(Owner or Owner's Designee) The (Date)
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vess Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compa</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owne Report during the period from <u>7/25/90</u> to <u>4/30/91</u> and state that to the best my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of t		
Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compa</u> ( <u>Factory Mutual System</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owne Report during the period from <u>7/25/90</u> to <u>4/30/9/</u> and state that to the best my knowledge and belief, this remain or replacement has been performed in accordance with Section XI of t		CERTIFICATE OF INSPECTION
ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, express	iy 's of ne ed is	I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compan</u> <u>(Factory Mutual System)</u> of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner Report during the period from <u><math>7/25/90</math></u> to <u><math>4/30/91</math></u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of th ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expresses or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor h employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arisin from or connected with this inspection.
<u>Inspector's Signature</u> Commissions <u>1862</u> California (State or Province, National Board) •		<u>Inspector's Signature</u> Commissions <u>1862</u> California (State or Province, National Board) ·
Date <u>April 30, 1991</u>		Date <u>April 30, 1991</u>

Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each Note: sheet is numbered and the number of sheets is recorded at the top of this form.

	<u>OWNER</u>	'S REPORT OF REPAIR OR		EMEN	<u>1</u>	
		As Required by the Provisions of ASME Cod	Sheet	Lot 1		
		•	Sheet	1 01 1		
1.	Owner: Southern Calif	ornia Edison Company brove Ave., Rosemead, CA 91770	ASME	MO:	91011057	
		nove Ave., Rosemend, or virve	Unit:	1		
2.	Plant: San Onofre Nu P.O. Box 128,	uclear Generating Station San Clemente, CA 92674-0128	RS:	017-91		
3.	Work Performed by:	Southern California Edison	P&ID:	517820	06, 5178225	
4.	System Identification:	Feedwater				

(a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" Blowdown Piping	N/A	N/A	N/A	S1-FWS-342-2"-EG	N/A	Repaired	No
2" Blowdown Piping	N/A	N/A	N/A	S1-FWS-343-2"-EG	N/A	Repaired	No
		l	•	· · · ·		l	

#### 7. Work Description:

5.

NDE Report 1MT-001-91 documented the identification of two (2) 1/16" cracks on Weld BD-4B located on FWS line 342"-EG. NDE Report 1MT-002-91 documents the identification of a 1/16" linear indication of Weld BD-2C located on FWS line 343-2"-EG. The indications were removed by grinding and blending into the surrounding area. An NDE/MT examination was conducted on the repaired areas with no relevant indications noted. The existing weld sizes were measured and found acceptable.

Reference: NCR 91010109

 8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: N/A psig Temp: N/A

9.	Remarks:	None
		(Applicable Manufacturer's Data Reports to be attached)
		CERTIFICATE OF COMPLIANCE
We cert	tify that the st	tements made in this report are correct and this <u>repair</u> conforms to the (repair or replacement)
	KUN	Supry ASME Codes Engineer 13 Feb 19 9/
Signed_	(Очле	or Owner's Designee) Title (Date)
		CERTIFICATE OF INSPECTION
f -	. 1.1	holding a valid commission issued by the National Board of Boiler and Pressure Vessel State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u>
(Fac	<u>ctorv Mutual S</u>	stem) of Norwood, Massachusetts have inspected the components destribute in the bast of
1	فيبيد وأحاله والبسو شرا	belief this service replacement has been performed in accordance with Section XI of the
1 4 C3	TE Cala Dua	gning this certificate, neither the Inspector nor his employer makes any warranty, expressed ing the repair or replacement in this Report. Furthermore, neither the Inspector nor his
emp	oloyer shall be	iable in any manner for any personal injury or property damage of a loss of any kind ansing
fron	n or connected	with this inspection.
-	-QD/hl	1202 Commissions 1862 California
Ins	pector's Signa	ure (State or Province, National Board)
	11	224/5,1991_
	C / LISTUS	204124 <sup>5</sup> 11
<b></b>		

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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# ASME Section XI Abstract Owner's Summary of Repair or Replacement

	Owner:		lifornia Edison Grove Ave.	n Compan	У	Trave	eler: S01-90-037
		Rosemead, C				Unit:	: 1
2.	Plant:	San Onofre P. O. Box 1	Nuclear Generat 28, San Clement	ing Sta ce, CA	tion 92674-0128		1-3642.00BP R/0
3.	Work Perfo	rmed by:	Bechtel Constr P. O. Box 450 San Clemente,			CWO:	90112220000 90120818000 90120789000
4.	System Ide	ntification:	Feedwater Syst	tem (FWS	5)	P&ID	: 5178205
5.	Plant Tag	No.: See NIS	5-2	Ser	ial No.:	See NIS-2	
6.	Component:	See NIS-2	·	Name:	See NIS-2	Size:	3"
7.	Code: XI-	2	Class:	SR			
8.	Purpose (S	statement of F	Problem):				
	MMP 1-364 S1-FSW-CV-	2.00BP modif 875A.	ied pipe line	S1-FWS	-6021-3",	adding by	/-pass around valv
						•	
	Associated	Drawings:	456527 FIDCN M-7642	· .			
9.		- .*		of Work	Performed	):	
9.	Narrative 1. The	Summary (Brie	FIDCN M-7642 of Description of locuments were r				e with the applicabl
9.	Narrative 1. The Cons 2. Valu the V, W	Summary (Brid appropriate d struction Code ves, piping an WR-5/5A weld J, X, Y, Z, MJ	FIDCN M-7642 of Description of ocuments were r e. d associated ha records A, B, 0	eviewed rdware w C, D, E, MF, MG,	to verify were instal , F, G, H,	compliance led I.A.W. J, K, L,	e with the applicabl MMP-1-3642.00BP an M, N, P, Q, S, T, U SB, SC, SD, SE, SF
9.	Narrative 1. The Cons 2. Valv the V, V SG,	Summary (Brid appropriate d struction Code ves, piping an WR-5/5A weld V, X, Y, Z, M/ SH, SJ, SK, S	FIDCN M-7642 of Description ocuments were r e. d associated ha records A, B, A, MB, MD, ME, J	eviewed rdware w C, D, E, MF, MG, SP.	to verify were instal , F, G, H, MH, MJ, M	compliance led I.A.W. J, K, L, K, ML, SA,	. MMP-1-3642.00BP an M, N, P, Q, S, T, U SB, SC, SD, SE, SF
9.	Narrative 1. The Cons 2. Value the V, W SG, 3. A Be	Summary (Brid appropriate d struction Code ves, piping an WR-5/5A weld V, X, Y, Z, M/ SH, SJ, SK, S ench Hydro Tes	FIDCN M-7642 of Description of ocuments were r e. d associated ha records A, B, A, MB, MD, ME, H SL, SM, SN, and	eviewed rdware w C, D, E, MF, MG, SP. , S, T,	to verify were instal , F, G, H, MH, MJ, M and U) wi	compliance led I.A.W. J, K, L, K, ML, SA, th VT-2 wa	. MMP-1-3642.00BP an M, N, P, Q, S, T, U SB, SC, SD, SE, SF
9.	Narrative 1. The Cons 2. Value the V, W SG, 3. A Be	Summary (Brid appropriate d struction Code ves, piping an WR-5/5A weld V, X, Y, Z, M/ SH, SJ, SK, S ench Hydro Tes	FIDCN M-7642 of Description of ocuments were r d associated ha records A, B, G A, MB, MD, ME, H SL, SM, SN, and st (on welds SF	eviewed rdware w C, D, E, MF, MG, SP. , S, T,	to verify were instal , F, G, H, MH, MJ, M and U) wi	compliance led I.A.W. J, K, L, K, ML, SA, th VT-2 wa	. MMP-1-3642.00BP an M, N, P, Q, S, T, U SB, SC, SD, SE, SF
	Narrative 1. The Cons 2. Valv the V, V SG, 3. A Be 4. A Sy	Summary (Brid appropriate d struction Code ves, piping an WR-5/5A weld V, X, Y, Z, M/ SH, SJ, SK, S ench Hydro Tes	FIDCN M-7642 of Description of ocuments were r and associated ha records A, B, M A, MB, MD, ME, H SL, SM, SN, and st (on welds SF ice Leak Test w	eviewed rdware w C, D, E, MF, MG, SP. , S, T,	to verify were instal , F, G, H, MH, MJ, M and U) wi	compliance led I.A.W. J, K, L, K, ML, SA, th VT-2 wa	. MMP-1-3642.00BP an M, N, P, Q, S, T, U SB, SC, SD, SE, SF
	Narrative 1. The Cons 2. Valv the V, V SG, 3. A Be 4. A Sy	Summary (Brid appropriate d struction Code ves, piping an WR-5/5A weld V, X, Y, Z, M/ SH, SJ, SK, S ench Hydro Tes vstem In-Serva	FIDCN M-7642 of Description of ocuments were r and associated ha records A, B, M A, MB, MD, ME, H SL, SM, SN, and st (on welds SF ice Leak Test w	eviewed rdware w C, D, E, MF, MG, SP. , S, T,	to verify were instal , F, G, H, MH, MJ, M and U) wi	compliance led I.A.W. J, K, L, K, ML, SA, th VT-2 wa	. MMP-1-3642.00BP an M, N, P, Q, S, T, U SB, SC, SD, SE, SF
	Narrative 1. The Cons 2. Valv the V, V SG, 3. A Be 4. A Sy	Summary (Brid appropriate d struction Code ves, piping an WR-5/5A weld V, X, Y, Z, M/ SH, SJ, SK, S ench Hydro Tes vstem In-Serva	FIDCN M-7642 of Description of ocuments were r and associated ha records A, B, M A, MB, MD, ME, H SL, SM, SN, and st (on welds SF ice Leak Test w	eviewed rdware w C, D, E, MF, MG, SP. , S, T,	to verify were instal , F, G, H, MH, MJ, M and U) wi	compliance led I.A.W. J, K, L, K, ML, SA, th VT-2 wa	. MMP-1-3642.00BP an M, N, P, Q, S, T, U SB, SC, SD, SE, SF
	Narrative 1. The Cons 2. Valv the V, V SG, 3. A Be 4. A Sy	Summary (Brid appropriate d struction Code ves, piping an WR-5/5A weld V, X, Y, Z, M/ SH, SJ, SK, S ench Hydro Tes vstem In-Serva	FIDCN M-7642 of Description of ocuments were r and associated ha records A, B, M A, MB, MD, ME, H SL, SM, SN, and st (on welds SF ice Leak Test w	eviewed rdware w C, D, E, MF, MG, SP. , S, T,	to verify were instal , F, G, H, MH, MJ, M and U) wi	compliance led I.A.W. J, K, L, K, ML, SA, th VT-2 wa	. MMP-1-3642.00BP an M, N, P, Q, S, T, U SB, SC, SD, SE, SF

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#### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

1. 0	wner:	2244 Walnut		son Com	ipany				Travel	er:	S01-90-	-037
		Rosemead, C	A 91770						Unit:	1		
2. P	lant:	San Onofre   P. O. Box 1	Nuclear Gene 28, San Clem	rating ente, C	Stati CA 92	on 674-0	128		MMP:	1-364	12.00BP	R/0
3. W	ork Perform	ned by:	Bechtel Con P. O. Box 4 San Clement	50		•	3		CWO:	90120	2220000 0818000 0789000	
4. S	ystem Ideni	tification:	Feedwater S	ystem (	(FWS)				P&ID:	51782	205	
5. (	a) Applic	able Constru	ction Code:	ASA B3 ASA B1	31.1, 6.5,	1955 1957	Ed. Ed.	for for	pipe valve:	CODE	CLASS:	XI-

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	Name of Nanufacturer	  Manufacturer  Serial No.	National Board No.	Other Identification	  Year  Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
3ª pipe Sch. 80 SS	Combustion Engineering	HT #N28974	N/A	RSO #3495-90 Items 1, 2, 6, 8, 10, 19, 32	N/A	     Replaced	     No
3ª Pipe Tee Sch. 80 SS	Custom Alloy   Corp.	HT #F7244	N/A	RSO #3495-90 Items 3, 7, 20	N/A	Replaced	 No
3" Pipe Flange Sch. 80 SS	   Ideal Forging   Company	HT #D3569	N/A	RSO #3495-90 Item 4	   N/A	Replaced	No
3ª Blind Flange Sch. 80 SS	   Ideal Forging   Company	HT #D35 <i>8</i> 9	N/A	RSO #3495-90 Item 5	H/A	Replaced	No
34 90° Elbow Sch. 80 SS	Custom Alloy Corp.	HT #F7243	N/A	   RSO #3495-90   Items 9, 11, 18	N/A	Replaced	No

7. Work Description:

MMP 1-3642.00BP modified pipe line S1-FWS-6021-3", adding a bypass around valve S1-FWS-CV-875A. Fabricated welds A, B, C, D, E, F, G, H, J, K, L, M, N, P, Q, S, T, U, V, W, X, Y, Z, MA, MB, MD, ME, MF, MG, MH, MJ, MK, SA, SB, SC, SD, SE, SF, SG, SH, SJ, SK, SL, SM, SN and SP. Performed Bench Hydrotest and System In-Service Leak Test.

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [X] Hydrostatic [X] Pneumatic [] Other [] Pressure: 1690 psig Temp: 62.7°F (Hydro) Pressure: >1150 psig Temp: 100.6 (System Inservice)

cumentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached) CERTIFICATE OF COMPLIANCE We certify that the statements made in this report are correct and this replacement \_\_\_\_\_ conforms to the rules of the ASME Code, Section XI (Owner or Owner's Designee) Title (Date) (Repair or Replacement) Signed \_\_\_\_\_i CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>, <u>Massachusetts</u> have inspected the the company of <u>Norwood</u>, <u>Massachusetts</u> have inspected the the company of <u>Norwood</u>, <u>Massachusetts</u> have inspected the the company of <u>Norwood</u>, <u>Massachusetts</u> have inspected the the company of <u>Norwood</u>, <u>Massachusetts</u> have inspected the the company of <u>Norwood</u>, <u>Massachusetts</u> have inspected the the company of <u>Norwood</u>, <u>Massachusetts</u> have inspected the the company of <u>Norwood</u>, <u>Massachusetts</u> have inspected the <u>sectors</u> described in this <u>Outpany</u> of <u>Norwood</u>, <u>Massachusetts</u> have inspected the <u>sectors</u> described in this <u>Outpany</u> of <u>Norwood</u>, <u>Massachusetts</u> have inspected the <u>sectors</u> described in this <u>Outpany</u> of <u>Norwood</u>. components described in this Owner's Report during the period from 1/10/91 to  $\frac{\partial}{\partial 2}$  and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System <u>Champin</u> Commissions <u>1862</u> CA Inspector's Signature (State or Province, National Board Date February 22, 1991 Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) Note: Suppremental Sheets in form of 11363, Sketches, of drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is size is 8-1/2 in. x if in., (2) into the top of this form. included on each sheet is recorded at the top of this form. e a souther a souther the souther of the souther of the souther and the souther and the souther and the souther Souther the souther of the souther the souther of the souther of the souther of the souther of the souther of the Souther of the souther of the souther of the souther of the souther of the souther of the souther of the souther something ( ) All grade ( ) and ( ) and ( ) 

Page 2 6

Supplemental Sheet for NIS-2 Form Page 3 of 4

1. Owner:	2244 Walnu	alifornia Edison Company It Grove Ave.	Trave	ler: S01-90-037
	Rosemead,		Unit:	1
2. Plant:	San Onofre P. O. Box	Nuclear Generating Station 128, San Clemente, CA 92674-0128	MMP:	1-3642.00BP R/0
3. Work Per	formed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CWO:	90112220000 90120818000 90120789000
4. System I	dentification	Feedwater System (FWS)	P&ID:	5178205

4. System Identification: Feedwater System (FWS)

Name Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	  Year  Built	Repaired Replaced,or Replacement	
3"x2" Swage Sch. 80 SS	WFI Nuclear Product, Inc.	HT #9565NA	N/A	RSO #3495-90   Items 15 & 17	N/A	   Replaced	No
1/2" Pipe Sch. 160 SS	Teledyne Columbia	HT #AH3413	N/A	RSO #3494-90 Items 21, 28, 37, 41, 46, 50	   N/A	Replaced	No
1/2"P x 3/8" Sch. 160 Connector	  Parker Hannifin  Corp.	HT #400E	N/A	RSO #5045-86   Items 23, 39, 43,   48, 52	N/A	Replaced	     No
3/8" Tube Plug	  Parker Hannifin  Corp.	НТ #ССҮ	N/A	RSO #0820-90   Items 24, 31, 40, 44,   49, 53	N/A	Replaced	No
1/2" Pipe Sch. 80 SS	Teledyne  Columbia	  HT #AH4481	N/A	RSO #3494-90   Item 25	H/A	Replaced	   No
1/2" Pipe Cap 3000# SS	  Alloy Stainless  Steel	HT #EDN	N/A	RSO #3494-90 Item 26	N/A	Replaced	No
1/2" Half Coupling 6000# SS	  WFI Nuclear  Product	HT #884 SNA	N/A	   RSO #3494-90   Item 27	N/A	Replaced	No
1/2"Px3/8"T Connector Sch. 160	  Parker Manifin  Corp.	HT #388C	N/A	   RSO #0560-84   Item 30	N/A	Replaced	No
7/8" x 6" Stud Bolt	Cardinal  Industrial  Product, Inc.	H/C #D4	N/A	RSO #3508-90 Item 34	   N/A	Replaced	No
7/8" Hex Nut	  Texas Bolt Co.	H/C #D8	N/A	RSO #3508-90   1tem 35	N/A	Replaced	No
3" Orifice Assembly	Permutit Co.	S/N N5591	N/A	RSO #0052-91   Item 45   RO - 897A	   N/A	Replaced	     No
3" Orifice Assembly	Permutit Co.	S/N N5587	N/A	RSO #0057-91   Item 54   RO - 897	     /A	Replaced	No

Supplemental Sheet for NIS-2 Form Page 4 of 4

			======== Travel	er: S01-90-037
1. Owner:	Southern C 2244 Walnu Rosemead,	alifornia Edison Company t Grove Ave. CA 91770	Unit:	
2. Plant:	San Onofre	Nuclear Generating Station 128, San Clemente, CA 92674-0128	MMP:	1-3642.00BP R/0
3. Work Perf		Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CM0:	90112220000 90120818000 90120789000
		Custom (FWS)	P&ID:	5178205

4. System Identification: Feedwater System (FWS)

ASME Code Repaired Stamped Replaced, or Year Other National Replacement Yes/No Built Manufacturer Board No. Identification Name of Name Serial No. Manufacturer Component RSO #1347-90 No Replaced N/A Item 55 1/2" Pipe N/A Colonial Machine H/C #GGH Plug RSO #2165-90 Item 16 1990 | Replaced Yes \$1-FWS-600 2<sup>H</sup> Gate N/A S/N E3265-20-5 Anchor Darling Valve RSO #2P-47-84 1/2" Globe Item 22 Yes 1983 | Replaced \$1-FWS-596 Valve N/A S/N ZP49-6 Kerotest Co. 1500# SS RSO #4289-85 1/2" Globe 1tem 29 1985 Yes Replaced \$1-FWS-598 Valve N/A S/N CAR 20-11 Kerotest Co. 1500# SS RSO #4289-85 1/2" Globe Item 38 Yes 1985 Replaced \$1-FWS-602 Vaive N/A S/N CAR 20-15 1500# SS Kerotest Co. 850 #4289-85 1/2" Globe Item 42 1985 | Replaced Yes \$1-FWS-604 Valve S/N CAR 20-13 N/A Kerotest Co. 1500# SS RSO #1960-86 1/2" Globe Item 51 Yes 1986 Replaced \$1-FW\$-608 Valve N/A S/N CAR 20-12 Kerotest Co. 1500# SS RSO #4289-85 1/2" Globe Item 47 Yes 1985 | Replaced Valve \$1-FWS-606 S/N CAR 20-8 N/A Kerotest Co. 1500# SS ł

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# ASME Section XI Abstract Owner's Summary of Repair or Replacement

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1. Owner:	Southern Ca 2244 Walnut Rosemead, C	Grove Ave.	Company ·	Trav Unit	eler: S01-90-038
2. Plant:	San Onofre	Nuclear Generat	ing Station		
	P. O. Box 1	28, San Clement	e, CA 92674-0		1-3642.00BP R/0
3. Work Perfor	rmed by:	Bechtel Constr P. O. Box 450 San Clemente,			90112220000 90120789000 90121048000
4. System Iden	ntification:	Feedwater Syste	m (FWS)	P&ID	: 5178205
5. Plant Tag I	No.: See NIS	-2	Serial No.	: See NIS-2	
6. Component:	See NIS-2		Name: See NIS	-2 Size:	3"
7. Code: XI-	2	Class:	SR		
8. Purpose (S	tatement of F	roblem):			
	2.00BP modif		S1-FWS-6020-3	", adding	bypass around valve
Associated	Drawings:	456528 FIDCN M-7655			
9. Narrative	Summary (Brie	of Description o	of Work Perform	ned):	
	appropriate d truction .Code		eviewed to veri	fy complianc	e with the applicable
MMP M, N	1-3642.00BP	and the WR-5/5A	weld records / Y, Z, MA, MB,	A, B, C, D, MC, MD, ME,	in accordance with E, F, G, H, J, K, L, MF, MG, MH, SA, SB,
3. A Be	nch Hydrotest	: (on welds R, S	S, Z and SE) wi	ith VT-2 was	performed.
4. A Sy	stem In-Serv	ice Leak Test wi	ith VT-2 was pe	erformed.	
10. Material	Used: See N	[S-2			
	. •				
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rrep		<u>rearel Idàlat</u>		Date <u>02/0</u>	

#### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> <u>As Required by the Provisions of ASME Code Section XI</u>

. Owner	2244 Walnut	lifornia Edison Company Grove Ave.	Travel	ler: S01-90-038
	Rosemead, C	A 91770	Unit:	1
2. Plant	: San Onofre P. O. Box 1	Nuclear Generating Station 28, San Clemente, CA 92674-0128	MMP:	1-3642.00BP
3. Work	Performed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CWO:	90112220000 90120789000 90121048000
4. Syste	m Identification:	Feedwater System (FWS)	P&ID:	5178205
4. Syste 5. (a)			for Pipe	5178205 Code Cla

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
3" Pipe Sch. 80 SS	Combustion Engineering	HT #N28974	N/A	RSO #3495-90 litems 1, 2, 6, 9, 34, 35	N/A	Replaced	No
3 <sup>H</sup> Pipe Tee Sch. 80 SS	Custom Alloy [Corp.	HT #F7244	N/A	RSO #3495-90 ltems 3, 8	N/A	Replaced	   No
3" Pipe Flange Sch. 80 SS	  Ideal forging	HT #D3569	N/A	RSO #3495-90 Item 4	N/A	Replaced	   No
3" Blind Flange 900# SS	Ideal Forging	HT #D3569	N/A	  RSO #3495-90  Item 5	N/A	Replaced	     No

7. Work Description:

MMP 1-3642.00BP modified pipe line S1-FWS-6020-3", adding a bypass around valve S1-FWS-CV-875A. Fabricated welds, A, B, C, D, E, F, G, H, J, K, L, M, N, P, Q, R, S, T, U, V, W, X, Y, Z, MA, MB, MC, MD, ME, MF, MG, MH, SA, SB, SC, SD, SE, SF, SG, SH, SJ, SK, SL, SM, SN, and SP. Performed a Bench Hydrotest and System In-service Leak Test.

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [X] Hydrostatic [X] Pneumatic [] Other [] Pressure: 1690 psig Temp: 62.7°F (Hydro) Pressure: >1150 psig Temp: 101.0 (System In-service)

#### 9. Remarks:

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this replacement \_\_\_\_\_\_ conforms to the rules of the ASME Code, Section XI (Repair or Replacement)

Signed <u>78 Ann (n Grechiedes</u> <u>2-21</u>, 19<u>91</u> (Owner or Owner's Designee) Title (Date)

## CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>///0/9/</u> to <u>2/22/9/</u> and state that to the best of my knowledge and belief, this repair or réplacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

<u>Inspector's Signature</u> Commissions <u>1862</u> <u>CA</u> (State or Province, National Board analisa, alia ani asi ambha marangan ma Date Florian 22, 1991 Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form. Sector Statutes: Sector a sector of the Sector Functions of the Sector Functions of the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for the Sector for

Page 2 of

Supplemental Sheet for NIS-2 Form Page 3 of 4

1. Owner:	Southern C 2244 Walnu	======================================	Trave	ler: S01-90-038
	Rosemead,		Unit:	1
2. Plant:	San Onofre P. O. Box	Nuclear Generating Station 128, San Clemente, CA 92674-0128	MMP:	1-3642.00BP
3. Work Per	formed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CWO:	90112220000 90120818000
4. System I	dentification:	Feedwater System (FWS)	P&ID:	5178205

Name Component	  Name of  Manufacturer	  Manufacturer  Serial No.	National Board No.	Other Identification	Year Built	Repaired  Replaced,or  Replacement	ASME Code Stamped Yes/No
3" S.R. Elbow Sch. 80 SS	Custom Alloy Corp.	  HT #F7254	   N/A	 RSO #3561-90  Item 7	N/A .	     Replaced	No
3" 90° Elbow Sch. 80 SS	Custom Alloy Corp.	HT #F7243	N/A	  RSO #3495-90  Items 10 & 17	N/A	Replaced	No
3" x 2" Swage Sch. 80 SS	WFI Nuclear Product, Inc.	HT #956 SNA	N/A	RSO #3495-90 Items 14 & 16	   N/A	Replaced	No
3" Pipe Tee Sch. 80 SS	WFI Nuclear Product, Inc.	HT #1AH	N/A	RSO #3585-90 Item 18	N/A	Replaced	 No
1/2" Pipe Sch. 80 SS	  Teledyne  Columbia	HT #AH4481	N/A	RSO #3494-90 Items 19, 23 & 26	   H/A	Replaced	     No
1/2"Px3/8"T Sch. 160 Connector	  Parker Hannifin  Corp.	HT #400E	   N/A	RSO #5045-86 Items 21 & 28	N/A	Replaced	No
3/8" Tube Plug	  Parker Hannifin  Corp.	- HT #CCY	N/A	RSO #0820-90 11tems 22, 29, 39, 43, 48, 52	N/A	Replaced	     No
1/2" Pipe Cap 3000# SS	Alloy Stainless	HT #EDN	   N/A	RSO #3494-90  Item 24	N/A	Replaced	No
1/2" Half Coupling 3000# SS	Camco Fitting Co.	HT #EIM	N/A	  RSO #3494-90  Item 25	N/A	Replaced	No
7/8"x6-1/2" Stud Bolt	Cardinal  Industrial  Product, Inc.	H/C #D4	   N/A	  RSO #3508-90  Item 31	N/A	Replaced	No
1/2" Pipe Sch. 160 SS	Teledyne Columbia	HT #AH3413	N/A	RSO #3494-90 Item 36, 40, 45, 49	   N/A	Replaced	No

Page 4 of 4	Southern California Edison Company	Traveler: S01-90-038
1. Owner:	2244 Walnut Grove Ave. Rosemead, CA 91770	Unit: 1
2. Plant:	San Onofre Nuclear Generating Static P. O. Box 128, San Clemente, CA 926	on 574-0128 MMP: 1-3642.00BP
3. Work Perf	ormed by: Bechtel Construction Co: P. O. Box 450 San Clemente, CA 92674-012	<b>CWO:</b> 90112220000 90120789000 90121048000

## 4. System Identification:

P&ID: 5178205

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lame Component	Name of Manufacturer	  Manufacturer  Serial No.	National Board No.	Other Identification	Year  Built	Repaired Replaced,or Replacement	
7/8" Hex Nut	  Texas Bolt Co.	H/C #08	N/A	RSO #3508-90  Item 32	N/A	Replaced	No
			······································		1	1	t
1/2"Px3/8"T Sch. 160 Connector	  Parker_Hannifin  Corp.	HT #162C	N/A	RSO #0560-84 Items 38, 42, 47	N/A	Replaced	No
3" Flow Drifice Assembly	Permutit Co.	s/n #n5592	N/A	RSO #0052-91  Item 44  S1-FWS-R0898A	N/A	Replaced	No
1/2"Px3/8"T Sch. 160 Connector	  Parker Hannifin  Corp.	HT #388C	N/A	 RSO #0560-84  Item 51	N/A	Replaced	No
3" Flow Orifice Assembly	Permutit Co.	s/n #n5588	N/A	RSO #0057-91  Item 53  S1-FWS-RO-898	N/A	Replaced	No
1/2" Pipe Plug	Colonial Machine Co.	H/C #GGH	N/A	RSO #1347-90  Item 54	N/A	Replaced	No
2" Globe Valve 1878 # S.S.	Anchor Darling Co.	S/N # E3265-31-2	N/A	RSO #3583-90  Item 15  S1-FWS-599	N/A	Replaced	Yes
1/2" Globe Valve 1500 # S.S.	Kerotest Mfg. Corp.	S/N # DAE-45-5	N/A	RSO #8294-84  Item 20  S1-FWS-595	1981	     Replaced	Yes
1/2" Globe Valve 1500 # S.S.	Kerotest Mfg. Corp.	S/N # DAE-45-21	N/A	RSO #8294-84  Item 27  S1-FWS-597	1981	Replaced	Yes
1/2" Globe Valve 1500 # S.S.	Kerotest Mfg. Corp.	   S/N #   CAR -20-2	N/A	RSO #5024-84 Item 37 S1-FWS-601	1984	Replaced	Yes
1/2" Globe Valve 1500 # S.S.	Kerotest Mfg. Corp.	S/N # CAR-20-6	N/A	RSO #5024-84   I tem 41   S1-FWS-603	1984	Replaced	   Yes
1/2" Globe Valve 1500 # S.S.	Kerotest Mfg. Corp.	S/N # CAR-20-7	N/A	RSO #5024-84 I tem 46 S1-FWS-605	1984	Replaced	Yes
1/2" Globe Valve	Kerotest Mfg. Corp.	S/N # CAR-20-1	N/A	RSO #5024-84 Item 50 S1-FWS-607	· ·	Replaced	Yes

		أيست ومعتمين والمتعادين	quired by the Provi		Sheet 1	of 1		
•	Owner: South	ern California E	Edison Company	y	ASME	MO:	89061998	
	2244	Walnut Grove A	ve., Rosemead,	, CA 917/0	Unit:	1		
•	Plant: San ( P.O.	Dnofre Nuclear ( Box 128, San Cl	Generating Stati emente, CA 92	ion 2674-0128	RS:	037-91		
	Work Perform	ned by: Sout	thern California	Edison	P&ID:	5178205	(E-10)	
۱.	System Ident	ification: Fee	dwater					
	(b) App Add	licable Edition o enda, Code Case	of Section XI Ut es: None	ilized for Re	pairs or Replace	ments: 19	977 Edition, S'7	8
6.	Add	licable Edition of enda, Code Case n of Component	es: None s Repaired or F	Replaced:		<del></del>	Repaired,	ASME Co
6.	Add Identificatio	enda, Code Caso	es: None		Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Co Stampe Yes/No
	Add Identificatio	enda, Code Case	s Repaired or F	Replaced:	Other	Year	Repaired, Replaced, or	ASME Co Stampe
3" G	Add Identificatio	n of Component Name of Manufacturer Black, Sivall & Bryon	es: None s Repaired or F Manufacturer Serial No.	Replaced: National Board No. N/A	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Co Stampe Yes/No
3" G	Add Identificatio Name of Component lobe Valve Work Descr The gasket	n of Component Name of Manufacturer Black, Sivall & Bryon	s Repaired or F Manufacturer Serial No. 70-71428	Replaced: National Board No. N/A	Other Identification	Year Built N/A	Repaired, Replaced, or Replacement Repaired	ASME Co Stampe Yes/No No
6. 3" G 7.	Add Identificatio	n of Component Name of Manufacturer Black, Sivall & Bryon iption: seating surface o	s Repaired or F Manufacturer Serial No. 70-71428	Replaced: National Board No. N/A	Other Identification S1-FWS-CV-875B	Year Built N/A	Repaired, Replaced, or Replacement Repaired	ASME Co Stampe Yes/No No

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9.

**Remarks:** 

None

(Applicable Manufacturer's Data Reports to be attached)
·
CERTIFICATE OF COMPLIANCE
CERTIFICATE OF COMPLIANCE
We certify that the statements made in this report are correct and this <u>repair</u> conforms to the rules of the ASME Code, Section XI. (repair or replacement)
Signed <u>Supvg. ASME Codes Engineer</u> 29 May 19 9 (Owner or Owner's Designee) Title (Date)
(Owner or Owner's Designee) Title (Date) /
CERTIFICATE OF INSPECTION
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> <u>(Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from <u>2///4/9/</u> to <u>5//30/9/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. <u>Mathematical Mathematical Commissions</u> <u>1362</u> <u>California</u> Inspector's Signature (State or Province, National Board) Date <u>May 30</u>, 1991</u>
Inspector's Signature (State or Province, National Board)

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

NIS-2	
OWNER'S REPORT OF REPAIR OF	REPLACEMENT

			As Requ	uired by the Provis					
•						Sheet 1	ot 1		
	Owner:	Southern Califo 2244 Walnut Gi	rnia Ed	lison Company (e., Rosemead,	CA 91770	ASME		89112543	
		ZZ44 Walliul O				Unit:	1		
I	Plant:	San Onofre Nu P.O. Box 128, S	clear G San Cle	enerating Station mente, CA 920	on 674-0128	RS:	180-90 R	lev: 3	
•	Work I	erformed by:		ern California		P&ID:	5178206		
•	System	Identification:	Feed	water					
•	(a)	Annlicable Col	nstruct						
	<b>(b)</b>	XI-2, Code Ca Applicable Ed Addenda, Cod	ition of le Case	one Section XI Uti s: None	ilized for Re	quipments Specif pairs or Replace			
6.	<b>(b)</b>	XI-2, Code Ca Applicable Ed Addenda, Cod	ition of le Case	one Section XI Uti s: None	ilized for Re			977 Edition, S'7	8
5.	(b) Identii Name of	XI-2, Code Ca Applicable Ed Addenda, Cod fication of Comp	ition of the Case ponents	one Section XI Uti s: None	ilized for Re	pairs or Replace Other Identification	ments: 19 Year Built	Repaired, Replaced, or Replacement	ASME C Stamp Yes/
	(b) Identi	XI-2, Code Ca Applicable Ed Addenda, Cod fication of Comp t Manufac	ition of turer er	one Section XI Uti s: None Repaired or R Manufacturer	ilized for Re eplaced: National	pairs or Replace	ments: 19 Year	P77 Edition, S'7 Repaired, Replaced, or	ASME C Stamp Yes/
8" C	(b) Identii Name of Component	XI-2, Code Ca Applicable Ed Addenda, Cod fication of Comp t Manufac	ition of le Case ponents of turer er ols 3	one Section XI Uti s: None Repaired or R Manufacturer Serial No.	ilized for Re eplaced: National Board No.	Other Identification S1-FWS-FCV-456 RSO 1722-85 ME-90-041	ments: 19 Year Built	Repaired, Replaced, or Replacement	ASME C Stamp Yes/
8" C Stud	(b) Identii Name of Componen Control Val	XI-2, Code Ca Applicable Ed Addenda, Cod fication of Comp t Name t Manufac ve Fish Contr	uses: N ition of le Case ponents of turer er ols 3 ering G	one Section XI Uti s: None Repaired or R Manufacturer Serial No. 3824151	ilized for Re Leplaced: National Board No. N/A	Other Identification S1-FWS-FCV-456 RSO 1722-85	Year Built N/A	Repaired, Replaced, or Replacement	

#### 7. Work Description:

The lower seat/body threads were damaged in the valve body. the damage to the threads were documented as a nonconformance and repaired by cutting oversize threads into the body. A VT-1 examination was performed on the repaired area. New studs and nuts along with the valve internals consisting of a valve plug were replaced. The replacements were verified to be in compliance with the original construction code requirements. No "Code" welding was performed during the performance of this activity.

References: NCR 1-7431, NCR 90090121, ME-90-041 (studs/nuts), ME-90-054 (valve plug)

 Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 650 psig Temp: N/A

		(A aplia	able Manufacturer's Data Reports to be attached)
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		<u>CEF</u>	RTIFICATE OF COMPLIANCE
cer s of	tify that the st	atements made in ode) Section XI.	this report are correct and this <u>replacement</u> conforms to the (repair or replacement)
ed_	ALA	r or Owner's Desig	Supvg. ASME Codes Engineer 17 May 1991 mee) Title (Date)
		I OI OWIICI & DOSŲ	
		CE	RTIFICATE OF INSPECTION
	ectors and th	- Chate on Drovin	commission issued by the National Board of Boiler and Pressure Vessel ace of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> d. <u>Massachusetts</u> have inspected the components described in this Owner's
Rep ny l ASN	ort during the knowledge and AE Code. By s	period from <u>7//</u> l belief, this repair igning this certifica	or replacement has been performed in accordance with Section XI of the ate, neither the Inspector nor his employer makes any warranty, expressed replacement in this Report. Furthermore, neither the Inspector nor his
Rep ny l ASN or iu emp	ort during the knowledge and AE Code. By s mplied, concer ployer shall be	period from <u>7//</u> l belief, this repair igning this certifica	or replacement has been performed in accordance with Section XI of the ate, neither the Inspector nor his employer makes any warranty, expressed replacement in this Report. Furthermore, neither the Inspector nor his her for any personal injury or property damage or a loss of any kind arising
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Rep my l ASN or in emp fron	ort during the knowledge and AE Code. By s mplied, concer ployer shall be	period from <u>7</u> l belief, this repair igning this certifica- ning the repair or liable in any manne d with this inspecti mmMan Cor	or replacement has been performed in accordance with Section XI of the ate, neither the Inspector nor his employer makes any warranty, expressed replacement in this Report. Furthermore, neither the Inspector nor his her for any personal injury or property damage or a loss of any kind arising ion.
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Rep my l ASN or in from Ins	ort during the knowledge and AE Code. By s mplied, concer- ployer shall be n or connected pector's Signa	period from <u>7</u> l belief, this repair igning this certifica- ning the repair or liable in any manne d with this inspecti mmMan Cor	or replacement has been performed in accordance with Section XI of the ate, neither the Inspector nor his employer makes any warranty, expressed replacement in this Report. Furthermore, neither the Inspector nor his er for any personal injury or property damage or a loss of any kind arising ion. mmissions <u>B(aZ)</u> California (State or Province, National Board)

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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OWNER'S REPORT OF REPAIR OR REPLACEMENT									
As Required by the Provisions of ASME Code Section XI									
		Sheet 1 of 1							
1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	ASME MO: 90102864							
	2244 Walliut Grove Ave., Rosemeau, CA 91/10	Unit: 1							
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	<b>RS:</b> 353-90							
3.	Work Performed by: Southern California Edison	<b>P&amp;ID:</b> 5178206 (G-8)							

4. System Identification: Feedwater

- (a) Applicable Construction Code: Westinghouse Equipment Specification 675206, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
8" Control Valve	Fisher Controls	3824151	N/A	S1-FWS-FCV-456 Model 82102 Type 657 AV	N/A	Repaired	No

#### 7. Work Description:

Pitting in the gasket surfaces of the valve body in the upper and lower cage seating surfaces required machining to correct. The upper and lower cage seating surfaces were machined to remove pitting and surface irregularities. The material removed did not exceed .030" from either surface. A final visual examination was performed on the machined surfaces.

Reference: NCR 90090121

8.

5.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] (visual examination of machined surfaces only) Pressure: N/A psig Temp: N/A

Reference MO 89112543 for other repairs/replacements and final pressure testing after Remarks: returning the system to service.

(Applicable Manufacturer's Data Reports to be attached)

### CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are corrules of the ASME Code, Section XI. Signed		or replacement)	199
CERTIFICATE O	F INSPECTION		······································
I, the undersigned holding a valid commission issued b Inspectors and the State or Province of <u>California</u> , ex (Factory Mutual System) of Norwood, Massachusetts hav Report during the period from $10/2 \pm 1/90$ to my knowledge and belief, this repair or replacement has ASME Code. By signing this certificate, neither the Inspector implied, concerning the repair or replacement in this employer shall be liable in any manner for any personal in from or connected with this inspection. Mathematical Commissions 1864 Inspector's Signature (State or Prince)	mployed by <u>Arkwris</u> re inspected the comp $0 - \frac{0}{2} - \frac{2}{9}$ been performed in a ector nor his employed Report. Furthermon njury or property dar	ght Mutual Insura ponents described i and state that .ccordance with Sec er makes any warra ore, neither the Ins mage or a loss of an	nce Company in this Owner's to the best of ction XI of the inty, expressed
Date <u>feb 25</u> 19 9/	- -		

Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. Note: x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

9.

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

			As Required by the Provisions of ASME	Code Section XI			
				Sheet 1	of 1		<u> </u>
1.	Owner:	Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770		ASME	MO:	90012626	
				Unit:	1		
2.	Plant:	San Onofre Nu P.O. Box 128,	uclear Generating Station San Clemente, CA 92674-0128	RS:	188-90	)	
3.	Work I	erformed by:	Southern California Edison	P&ID:	517820	06	
4.	System	Identification:	Main Feedwater				

- 5. (a) Applicable Construction Code: ASA B31.1, 1955 Edition/Westinghouse Equipment Specification E675206, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
8" Flow Control Valve	Fisher	3824152	N/A	S1-FWS-FCV-457	N/A	+	No
Studs (12)	AAG Engineering	Et. Code "QI"	N/A	RSO 1722-85	N/A	Replacement	No
Nuts (24)	A&G Engineering	Ht. Code "ADD"	N/A	RSO 1722-85	N/A	Replacement	No

7. Work Description:

8.

Replaced bolting material on the lower flange of the valve. This consisted of twelve (12) SA-193, B7 studs and twenty-four (24) SA-194, 2H nuts. Replacement bolting material was verified to be compatible with the installation and system requirements. A VT-2 examination was conducted in conjunction with a system-in-service pressure test.

Reference: ME-90-041, NCR SO1-P-7443, FCN S-4958-M

Tests Conducted: System Leakage [] System Functional [] System Inservice [X] Hydrostatic [] Pneumatic [] Other [] Pressure: 650 psig Temp: N/A

•	Remarks:	None	
		. (	Applicable Manufacturer's Data Reports to be attached)
We cer rules o Signed	f the ASME C	tatements ma	<u>CERTIFICATE OF COMPLIANCE</u> ade in this report are correct and this <u>replacement</u> conforms to the (repair or replacement) <u>Supvg. ASME Codes Engineer 23 Apr. 19</u>
	(Owne	er or Owner's	s Designee)
Ins (F: Re my AS or en fr	pectors and t actory Mutual port during th knowledge ar ME Code. By	he State or <u>System</u> ) of <u>No</u> e period from ad belief, this signing this c erning the rep e liable in any ed with this i	CERTIFICATE OF INSPECTION valid commission issued by the National Board of Boiler and Pressure Vessel Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> <u>orwood, Massachusetts</u> have inspected the components described in this Owner's an <u><math>G/25/9C</math></u> to <u><math>4/21/91</math></u> and state that to the best of repair or replacement has been performed in accordance with Section XI of the pertificate, neither the Inspector nor his employer makes any warranty, expressed pair or replacement in this Report. Furthermore, neither the Inspector nor his manner for any personal injury or property damage or a loss of any kind arising inspection. <u>Commissions</u> <u>California</u> 1574 (State or Province, National Board)
D	ate <u>April</u>	.34	_ 19 <u>_9(</u>

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

			Sheet 1	1 of 1	
l.'	Owner: Southern Calif 2244 Walnut G	ornia Edison Company rove Ave., Rosemead, CA 91770	ASME		90031945 004
			Unit:	1	
	Plant: San Onofre Nu	clear Generating Station			
	P.O. Box 128, 1	San Clemente, CA 92674-0128	RS:	238-90	
				283-90	
•	Work Performed by:	Southern California Edison	P&ID:	517820	5
• •	System Identification:	Feedwater System			

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

5. (a) Applicable Construction Code: ASA B31.1, 1955 Edition; Code Classified XI-2

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

## 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Feedwater Pump	Byron Jackson	723306	N/A	S1-FWS-G-3A	N/A		No
10" 600# WN Flange, Sch 80 Bore	Radnor Alloys	Heat Code "RIT"	N/A	RSO 2495-90, A105	N/A	Replacement	No
Studs, 1-1/4"- 8, 16 each	A&G Engineering	Heat Code "GXI"	N/A .	RSO 1782-89, A193-B7	N/A	Replacement	No .
Nuts, 1-1/4" - 8, 32 each	AAG Engineering	Heat Code "HEF"	N/A	RSO 1782-89, A194-2E	N/A	Replacement	No

### 7. Work Description:

The piping system flange at the pump discharge and the flange bolting were replaced with in kind replacements. Code reconciliations, documented on ME-90-055 (bolting) and ME-90-064 (flange), were performed for the replacements. The welding was performed per WR1-90-573. A radiographic examination was performed on the weld.

Tests Conducted: System Leakage [] System Functional [1] System Inservice [] Hydrostatic [2] Pneumatic [] Other [X] VT-2 Exams were performed on both hydro and system functional tests Pressure: (1) 1190 psig Temp: (1) 305°F (2) 1060 psig (2) 330°F

8.

•	Kemarks:	NODE						
			(Applicable Ma	nufacturer's Da	ita Reports to	be attached)		
			<u>CERTIFI</u>	<u>CATE OF</u>	COMPL	IANCE		
Ve co ules	ertify that the st of the ASME C	atements ma lode, Section	ade in this re XI.	port are cor	rect and this	Replac (repair or	replacement	forms to the
Sione	a al Ma	lile-		Sudvg. AS	ME Codes	Engineer	6/3 (Date)	19 <u></u> 91
	(Owne	r or Owner's	Designee)		Title	-	(Date)	
			,					
			CERTIF	ICATE O	F INSPEC	CTION		
•				ion issued b	w the Natio	nal Board (	f Boiler and	Pressure Vessel
In	spectors and th	e State or I	Province of (	California, e	mploved by	Arkwright	Mutual Insu	rance Company
<b>(F</b>	2 fourtur Mutual	vetern) of No	wood Mass	achusetts hav	ve inspected	the compon	ients described	i in this Owner's
Re	port during the	period from	9 <u>-22</u>	<u>290</u> t	0 <u>c/ 8/</u>	med in acco	_ and state in ordance with S	at to the best of ection XI of the
A	ME Code By s	ioning this ce	ertificate, nei	ther the Insp	ector nor his	; employer 1	nakes any war	ranty, expressed
07	implied, concer	ming the rep	air or replac	ement in this	s Report. F	urthermore	, neither the L	nspector nor his
en f-	ployer shall be om or connected	liable in any	manner for a	iny personal	injury or pro	perty dama	ge or a loss of	any kind arising
	i a d							
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D	ate <u><u><u>H</u></u></u>		10 - /					
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Note:

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		As	Required by the Prov	visions of ASM				
		· · · · · · · · · · · · · · · · · · ·			Sheet 1	of 1		
•	Owner:	Southern California	Edison Compan	y CA 01770	ASME	MO:	90031985	
		2244 Walnut Grove	e Ave., Rosemeau	, CA 91770	Unit:	1		
	Plant:	San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128				107-90		
3.	Work P	erformed by: Sc	outhern California	Edison	P&ID:	5178205		
4.	System	Identification: Fe	edwater					
5.	(a)	Applicable Constru None	uction Code: ASA	B31.1, 195	5 Édition, Code C	lassified >	U-2, Code Case	es:
5.	(a) (b)		of Section XI Ut		•			,
	(b)	None Applicable Edition	of Section XI Ut ises: None	ilized for R	•			,
5. 6.	(b)	None Applicable Edition Addenda, Code Ca cation of Componer Name of	of Section XI Ut ises: None its Repaired or F Manufacturer	ilized for R	•			,

# NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

7. Work Description:

8.

A nut welded on a pipe flange located on the discharge side of the pump was removed to allow for the installation of a furminite injection assembly. The nut was removed from the flange by grinding. A satisfactory magnetic particle (MT) examination was conducted on the metal removal area.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] MT Examination

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Pressure: N/A psig Temp: N/A °F

	(Applicable Manufacturer's Data Reports to be attached)
	· ·
	CERTIFICATE OF COMPLIANCE
certify that the s	tatements made in this report are correct and this <u>repair</u> conforms to the Code, Section XI. (repair or replacement)
MM A	Er or Owner's Designee) Title (Date)
ned <u>AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA</u>	er or Owner's Designee) Title (Date)
(Uwbe	
	CERTIFICATE OF INSPECTION
the undersigne	d holding a valid commission issued by the National Board of Boiler and Pressure Vesse
	Le Crese de Deprinde of l'alitornia employen dy Alkwilent Mutual insurance company
(The set a set 1) (set as a 1 (	Current of Norrood Marcachicette have inspected the components described in this Owner.
mu linouiledge on	d belief this repair or replacement has been beriormed in accordance with becubit A or the
ACNE Cade Du	signing this certificate neither the inspector flor fils employer makes any wallanty, expressed
ASME Code. By	signing this certificate, neither the Inspector nor his employer makes any warranty, expressed
ASME Code. By	signing this certificate, neither the Inspector nor his employer makes any warranty, expressed
ASME Code. By : or implied, conce employer shall be	signing this certificate, neither the Inspector nor his employer makes any warranty, expressed erning the repair or replacement in this Report. Furthermore, neither the Inspector nor his liable in any manner for any personal injury or property damage or a loss of any kind arising
ASME Code. By a or implied, conce employer shall be from or connecte	signing this certificate, neither the Inspector nor his employer makes any warranty, expresses erning the repair or replacement in this Report. Furthermore, neither the Inspector nor his liable in any manner for any personal injury or property damage or a loss of any kind arisin ed with this inspection.
ASME Code. By a or implied, conce employer shall be from or connecte	signing this certificate, neither the Inspector nor his employer makes any warranty, expresses erning the repair or replacement in this Report. Furthermore, neither the Inspector nor his e liable in any manner for any personal injury or property damage or a loss of any kind arisin and with this inspection.
ASME Code. By a or implied, conce employer shall be from or connecte	signing this certificate, neither the Inspector nor his employer makes any warranty, expresses erning the repair or replacement in this Report. Furthermore, neither the Inspector nor his e liable in any manner for any personal injury or property damage or a loss of any kind arisin and with this inspection.
ASME Code. By a or implied, conce employer shall be from or connecte	signing this certificate, neither the Inspector nor his employer makes any warranty, expresse erning the repair or replacement in this Report. Furthermore, neither the Inspector nor his cliable in any manner for any personal injury or property damage or a loss of any kind arisin and with this inspection.
ASME Code. By s or implied, conce employer shall be from or connecte	signing this certificate, neither the Inspector nor his employer makes any warranty, expresses erning the repair or replacement in this Report. Furthermore, neither the Inspector nor his e liable in any manner for any personal injury or property damage or a loss of any kind arisin and with this inspection.
ASME Code. By s or implied, conce employer shall be from or connecte <u>MCM/COMP</u> Inspector's Signa	signing this certificate, neither the Inspector nor his employer makes any warranty, expressed erning the repair or replacement in this Report. Furthermore, neither the Inspector nor his cliable in any manner for any personal injury or property damage or a loss of any kind arising and with this inspection.
ASME Code. By or implied, conce employer shall be from or connecte <u>Methodor</u> Inspector's Signa	signing this certificate, neither the Inspector nor his employer makes any warranty, expressed erning the repair or replacement in this Report. Furthermore, neither the Inspector nor his e liable in any manner for any personal injury or property damage or a loss of any kind arisin ed with this inspection.

sheet is numbered and the number of sheets is recorded at the top of this form.

ASME Section X1 Abstract Owner's Summary of Repair or Replacement

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1. Owner	: Southern California Edison Company Traveler: S01-91-002 2244 Walnut Grove Ave. Rosemead, CA 91770 Unit: 1
2. Plant	
3. Work	Performed by: Bechtel Construction Co. CWO: 91010430000 P. O. Box 450 San Clemente, CA 92674-0128
4. Syste	m Identification: Feedwater System (FWS) P&ID: 5178205
5. Plant	Tag No.: S1-FWS-RO-897 & 898 Serial No.: N5587 & N5588
6. Compo	nent: Orifice Name: Permutit Size: 3"
7. Code:	ASA B-31.1, 1955 Ed. Class: XI-2
8. Purpo	se (Statement of Problem):
	1-3642.00BP/NCR #W-0006-91 replaces flange studs to provide proper thread ement.
Assoc	iated Drawing: 1810-AA319-D0022-0 (556-34465 Permutit) NCR #W-0006-91
9. Narrat	tive Summary (Brief Description of Work Performed):
1. 2.	NCR #W-0006-91 was reviewed. Flange studs were replaced on S1-FWS-R0-897 & 898.
	•
10. Mater	rial Used:
See NI	IS-2.

Prepared by: <u>L. Taylor</u>

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Date 01/29/91

NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> <u>As Required by the Provisions of ASME Code Section XI</u>

==:	=================				
1.	Owner:	Southern Ca 2244 Walnut	lifornia Edison Company Grove Ave.	Trave	ler: S01-91-002
		Rosemead, C	A 91770 -	Unit:	1
2.	Plant:	San Onofre P. O. Box 1	Nuclear Generating Station 28, San Clemente, CA 92674-0128	DCP:	1-3642.00BP
3.	Work Perfo	rmed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CWO:	91010430000
4.	System Iden	ntification:	Feedwater System (FWS)	P&ID:	5178205
5.	(a) Appl	icable Constr	uction Code: ASA B31.1, 1955 Ed.		CLASS: XI-2
	(b) Appl 1977	icable Editio Edition, thr	n of Section XI Utilized for Repair u S'78 Addenda, Code Cases: N/A	s or Re	placements:

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	  Manufacturer  Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	
7/8" Dia. Studs	Texas Bolt Co.	HT #JY8	N/A	RSO #1611-84  Item 5	   N/A	Replaced	N/A
			.   .		l		1

7. Work Description:

DCP 1-3642.00BP/NCR #W0006-91 replaces flange studs on S1-FWS-R0-897 & 898.

8. Tests Conducted: None

9. Remarks:

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this replacement conforms to the rules of the ASME Code, Section XI (Repair or Replacement) Signed  $\frac{1}{12}$  (Owner or Owner's Designee) Title (Date)

## CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from  $\frac{1/7/9}{1}$  to  $\frac{2/9}{9}$  and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

<u>Inspector's Signature</u> Commissions <u>1862 CA</u> (State or Province, National Board	
Date <u><i>Fibruary</i> 9</u> , 19 <u>7/</u>	

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

Page 2 of

ASME Section XI Abstract Owner's Summary of Repair or Replacement

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1.	Owner:	Southern California Edison Company 2244 Walnut Grove Ave. Rosemead, CA 91770	
~		C. O. Cur Nuclear Comparing Stat	Unit: 1
2.	Plant:	San Onofre Nuclear Generating Stat P. O. Box 128, San Clemente, CA 9	2674-0128 DCP: 1-3642.00BP
3.	Work Perfo	med by: Bechtel Construction C P. O. Box 450 San Clemente, CA 9267	
4.	System Ide	tification: Feedwater System (FWS)	P&ID: 5178205
5.	Plant Tag I	lo.: S1-FWS-RO-897A & 898A Seri	al No.: N5591 & N5592
6.	Component:	Orifice Name:	Permutit Size: 3"
7.	Code: ASA	3-31.1, 1955 Ed. Class: XI-2	
8.	Purpose (S	atement of Problem):	
	DCP 1-3642 engagement		nge studs to provide proper thread
	Associated	Drawing: 1810-AA319-D0023-0 (556-3 NCR #W-0003-91	4476 Permutit)
9.	Narrative S	ummary (Brief Description of Work Pe	erformed):
		W-0003-91 was reviewed. e studs were replaced on S1-FWS-RO-8	B97A & 898A.
10.	Material U	sed:	
	See NIS-2.		

L. Taylor

Prepared by:

Date \_\_\_\_01/29/91

	<u>As Requir</u>	ed by the Provisions of ASME Code S	ection XI
*============			
1. Owner: Southern California Edison Company 2244 Walnut Grove Ave.			Traveler: S01-91-001
	Rosemead, C	A 91770	Unit: 1
2. Plant:	San Onofre P. O. Box 1	Nuclear Generating Station 28, San Clemente, CA 92674-0128	DCP: 1-3642.00BP
3. Work Perfor	med by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CWO: 91010429000
4. System Iden	tification:	Feedwater System (FWS)	<b>P&amp;ID:</b> 5178205
5. (a) Appli	cable Constr	uction Code: ASA B31.1, 1955 Ed.	CLASS: XI-2
(b) <b>Appli</b> 1977	cable Editio Edition, thr	n of Section XI Utilized for Repairs u S'78 Addenda, Code Cases: N/A	s or Replacements:

NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the <u>Provisions of ASME Code Section X</u>

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	  Manufacturer  Serial No.	•	  National  Board No.	  Other  Identification		  Year  Built	Repaired Replaced,or Replacement		
7/8" Dia. Studs	l Texas Bolt Co.	HT #JY8		   N/A	RSO #1611-84  Item 5	•	N/A	  Replaced	N/A	
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7. Work Description:

DCP 1-3642.00BP/NCR #W0003-91 replaces flange studs on S1-FWS-R0-897A & 898A.



9. Remarks:

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI (Repair or Replacement) Signed <u>72 June</u> FLD. Const. #16R (Owner or Owner's Designee) Title (Date)

## CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>1/7/9/1</u> to <u>2/9/9/1</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

<u>Asthonymann</u> Commissions <u>1862 CA</u> Inspector's Signature (State or Province, National Board Date <u>Fibricana 9, 1991</u>

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

Page 2 of

NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> <u>As Required by the Provisions of ASME Code Section XI</u>

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1. Owner:	Southern Ca 2244 Walnut	lifornia Edison Company 5 Grove Ave.	Trave	ler: S01-90-010
	Rosemead, C		Unit:	1
2. Plant:	San Onofre P. O. Box 1	Nuclear Generating Station 28, San Clemente, CA 92672	DCP:	1-3548.00SN
3. Work Perfo	ormed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90060626000 90060640000
4. System Ide	entification:	Letdown System (LDS)	P&ID:	5178130
5. (a) <b>App</b> 1	licable Constr	ruction Code: ASA B16.5, 1957 Ed	. for valve piping Cod	s Code Class: XI-2 e Class: XI-2

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	  Manufacturer  Serial No.	  National  Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
1" check valve	Anchor Darting	SN #E-B579-1-1	N/A	ltem 1 LDS-023 RSO #2154-90	1990	Replacement	NO
1/2" globe Valve	Kerotest Mfg. Corp.	SN #AUK1-2	N/A	Item 2 LDS-024 RSO #1936-90	1990	Replacement	YES
1/2" globe valve	Kerotest   Mfg. Corp.	SN #CAR27-22	N/A	Item 3 LDS-025 RSO #1356-89	1989	Replacement	  YES
2" gate valve	Anchor   Darling	   SN #EB267-4-6	N/A	Item 4 LDS-026   RSO #1926-90	1990	Replacement	  YES
2" gate valve	Anchor   Darling	SN #EB267-4-5	N/A	Item 5 LDS-027   RSO #1926-90	1990	Replacement	YES
2" pipe Sch. 40S	Altech/Tioga Pipe Supply	HT #9E4063	N/A	Item 6,9,11,12,18,23,29   30,32,34 RSO #1996-90		  Replacement	NO

### 7. Work Description:

DCP 1-3548.00SN installs check valve S1-LDS-023 & test connections. Fabricates welds SA, SB, SC, SD, SE, SF, SG, SH, SJ, SK, SL, SM, SN, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, SMA, SMB, SMC, SMD, SME, SMF. Perform system hydrostatic test.

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [/] Pneumatic [] Other [] Pressure: 648 psig Temp: 84.7°F

9. \*\* Remarks:

Signed \_\_\_\_\_

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this replacement \_\_\_\_\_ conforms to the rules of the ASME Code, Section XI (Repair or Replacement) <u>(Owner or</u> Owner's Designee) Title (Date)

CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by \*Arkwright Mutual Insurance Company of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from  $\frac{R}{3}/\frac{3}{90}$  to  $\frac{9/25/90}{2}$  and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

<u>Schonipion</u> Commissions <u>1862-09</u> Inspector's Signature (State or Province, National Board Date <u>App. 25.</u>, 19<u>50</u> a a state to the state

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

Page 2 of

Supplemental Sheet for NIS-2 Form Page 3 of 3

			========================		;====	
1. Owner: Southern C 2244 Walnu		California Edison Company ut Grove Ave.	Trave	Traveler: SO1-90-010		
		CA 91770	Unit:	1	.≯	
2. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	DCP:	1-3548.00SN		
3. Work Perf	ormed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90060626000 90060640000		
		a Latdown System (LDS)	P&ID:	5178310		

# 4. System Identification: Letdown System (LDS)

Repaired ASME Code İYear Replaced, or Stamped Other National Manufacturer Name of Name Replacement Yes/No Identification Built Serial No. Board No. Manufacturer Component Item 7,8,10,31,33,35. 2" 90° Alloy Stainless/ Replacement NO | N/A j n/a RSO #1996-90 Tioga Pipe Supply | HT #HC eibow Item 13 & 28 [Alloy Stainless/ Replacement NO RSO #2243-90 İ N/A į n/a HT #HO 2" tee HUB Inc. 1tem 14 & 27 2" x 1/2" [Colonial Machine Í N/A Replacment **NO** RSO #2243-90 | HT #CET | N/A Co./HUB Inc. swage Item 19 & 22 Alloy Stainless/ Replacement NO RSO #1996-90 N/A | N/A L 2" coupling HUB Inc. HT #EHM 1 Item 20 & 21 2" x 1" Colonial Machine Replacement NO N/A RSO #2243-90 ] N/A HT #CET L 1 Co./HUB Inc. swage

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#### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

		==========			
1. Owner:	Southern California Edison Company 2244 Walnut Grove Ave.	Trave	Traveler: S01-91-01:		
	Rosemead, CA 91770	Unit:	1		
2. Plant:	San Onofre Nuclear Generating Station P. O. Box 128, San Clemente, CA 92674-0128	FCN:	F-5518M		
3. Work Pert	Formed by: Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CW0:	91020270000 91020496000		
4. System Id	dentification: (LDS) Letdown Demin System	P&ID:	5178140		
5. (a) Apj	plicable Construction Code: ASA B16.5, 1957 ED.	Code Cla	ss: XI-2		
(1)	-liceble Edition of Section VI Utilized for Rena	irs or Re	placements:		

(b) Applicable Edition of Section XI Utilized for Repai 1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
1/2º Plate	Grano Steel Corp.	Heat No. V01003	N/A	RSO# 0147-91	N/A	Replacement	No
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7. Work Description:

FCN F-5519M installs a flow direction indicator on valve S1-LDS-CV-526, fabricates welds, TC & TD

8. Tests Conducted: None

9. Remarks:

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this conforms to the rules of the ASME Code, Section XI replacement (Repair or Replacement)

FIELD CONST MGR 3/19, 1991 Signed MAMaes (Owner or Owner's Designee)

CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>. <u>Massachusetts</u> have inspected the <u>components</u> described in this Owner's Report during the period from <u>2/13/9/</u> to <u>3/19/9/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System Inspector's Signature Commissions (State or Province, National Board Date March 19. 1991

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form. 

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Page 2 of 2

NIS-2
OWNER'S REPORT OF REPAIR OR REPLACEMENT
As Required by the Provisions of ASME Code Section XI

			Sheet 1	ot 1		
I.	Owner:	Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	ASME	MO:	89111412	
			Unit:	1		
2.	Plant:	San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	RS:	712-89		
3.	Work I	Performed by: Southern California Edison	P&ID:	517822	5	
4.	System	Identification: Main Steam				
5.	(a)	Applicable Construction Code: Pipe: ASA B31.1, Edition, Code Classified XI-2, Code Cases: None	1955 Edition; Va	alve: AS	A B16.5, 1957	
	(b)	Applicable Edition of Section XI Utilized for Rep Addenda, Code Cases: None	pairs or Replacer	nents: 1	1977 Edition, S'7	78
6.	Identif	ication of Components Repaired or Replaced:		•		

	Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
. 3/4*	Globe Valve	Rockwell- Edwards	N/A	N/A	51-MSS-020	N/A	Replaced	No
3/4'	Globe Valve	Rockwell- Edwards	78ADB	N/A	RSO 1770-90 Part# 02610018	N/A	Replacement	No

#### 7. Work Description:

8.

Replaced 3/4" Rockwell-Edwards globe valve by welding. The replacement was verified to be in compliance with the original construction code as reconciled by CR-88-008. The valve was installed by welding. A pre-weld and post-weld NDE/PT was performed on the weld area with no relevant conditions noted.

References: NCR 1-7415-1, WR1-89-852, 1PT-18-90, 1PT-19-90

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] & nerry an exercise from the activity of the adaption of the second and the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the second at the se Pressure: 920 psig Temp: N/A

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(Applicable Manufacturer's Data Reports to be attached)

None

9.

**Remarks:** 

CERTIFICATE OF	COMPLIA	NCE	
We certify that the statements made in this report are correct to the rules of the ASME Code, Section XI. Signed <u>Meidle</u> Supvg. ASM (Owner or Owner's Designee)		(repair or replace	
CERTIFICATE OF I, the undersigned holding a valid commission issued by the Inspectors and the State or Province of <u>California</u> , employ (Factory Mutual System) of Norwood, Massachusetts hav Owner's Report during the period from $7/5/40$ the best of my knowledge and belief, this repair or replace Section XI of the ASME Code. By signing this certificate any warranty, expressed or implied, concerning the repair neither the Inspector nor his employer shall be liable in a damage or a loss of any kind arising from or connected w	he National yed by <u>Arkw</u> e inspected to to	Board of Boiler and Pr right Mutual Insurance the components describ G/7/9/ and lose performed in accor Inspector nor his emplanent in this Report. Fur for any personal injury section.	ed in this d state that to rdance with loyer makes inthermore,
<u>Inspector's Signature</u> Date <u>Hune</u> 7 19 <u>91</u>	ovince, Natio	a onal Board)	
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	OWNER	3 KEFORI OF KEITHK OK		<u></u>	<u> </u>
		As Required by the Provisions of ASME Cod	e Section XI		
			Sheet 1	1 of 1	
1.	Owner: Southern Califo	ASME	MO:	90012997	
		rove Ave., Rosemead, CA 91770	Unit:	1	
2.		clear Generating Station	20	000 00	
	P.O. Box 128, 5	San Clemente, CA 92674-0128	RS:	086-90	
3.	Work Performed by:	Southern California Edison	P&ID:	517822	25
4.	System Identification:	Main Steam		•	

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

5. (a) Applicable Construction Code: Bechtel Corp. Spec. BSO-503, Code Classified XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

#### 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
4" Control Valve	BS&B	70-70712	Ñ/A	S1-MSS-CV-76	N/A		No
Stem	MUESCO	Et. 626197-1	N/A	RSO 5155-85 Part 210561	N/A	Replacement	No
Inner Valve	MJESCO	Ht. 0A3137-1	N/A	RSO 5703-85 Part 184075	N/A	Replacement	No
Cage	Muesco	Ht. 0A2812-2	N/A	RSO 5585-5 Parte 183997	N/A	Replacement	No

#### 7. Work Description:

Valve was leaking across seat. Internal valve parts required replacement. The replacement stem and inner valve were verified to be in compliance with the original construction code as reconciled by SCE Material Reconciliation Report ME-90-034. A VT-2 examination was conducted in conjunction with a system functional pressure test.

n na sana silan na kawa ay kana sana bere ya dawala kanfina na menangi sana. Mala maka ka kawanang mangina daké alia kini kata kasili na sana mangina.

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other []

Pressure: 920 psig Temp: N/A

$\frac{IANCE}{(replacement)} conforms to the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of th$
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(repair or replacement) Engineer $4/2$ 19 9/
Engineer 4/2 19.9/ (Date)
(Date)
nal Board of Boiler and Pressure Vesse <u>Arkwright Mutual Insurance Company</u> the components described in this Owner's 2/9/ and state that to the best o rimed in accordance with Section XI of the s employer makes any warranty, expressed ourthermore, neither the Inspector nor his operty damage or a loss of any kind arising rnia
ational Board)

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form. 

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		<u> </u>	As Required by the Provi	sions of ASME	Code Section XI			
						1 of 1		
1.	Owner: So	outhern Califor	nia Edison Company	CA 01770	ASM	e mo:	90020186	
	22	244 Walnut Gr	ove Ave., Rosemead,		Unit:	1		
2.	Plant: S: P	an Onofre Nuc .O. Box 128, Sa	lear Generating Stati an Clemente, CA 92	on 674-0128	RS:	085-90		
3.	Work Per	formed by:	Southern California	Edison	P&II	: 5178225	5	
4.	System Id	lentification:	Main Steam					
5.		Applicable Con Code Cases: N	struction Code: Bech Ione	tel Corp. Sp	ec. BSO-503, C	ode Classi	fied XI-2,	
	(b) A	Applicable Edit Addenda, Code	ion of Section XI Ut Cases: None	llized for Rej	pairs or Replac	ements: 1	977 Edition, S'7	8
6.	Identifica	ation of Compo	nents Repaired or R	eplaced:				
	Name of	Name of	Manufacturer	National	Other	Year	Repaired, Replaced, or	ASME Code Stamped

## NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Replaced, or Replacement	Stamped Yes/No
BS&B	70-70714	N/A	S1-MSS-CV-78	N/A		No
Muesco	Ht. 626197-2	N/A	RSO 5155-85	N/A	Replacement	No
Muesco	Et. 0A3137-2	N/A	RSO 5703-85	N/A	Replacement	No
Muesco	Et. 0A2812	N/A	RSO 5155-85	N/A	Replacement	No
	Manufacturer BS&B Muesco Muesco	Manufacturer         Serial No.           BS&B         70-70714           Muesco         Bt. 626197-2           Muesco         Et. QA3137-2	Manufacturer         Serial No.         Board No.           BS&B         70-70714         N/A           Muesco         Ht. 626197-2         N/A           Muesco         Et. 0A3137-2         N/A	Manufacturer         Serial No.         Board No.         Identification           BS&B         70-70714         N/A         S1-MSS-CV-78           Muesco         Et. 626197-2         N/A         RSO 5155-85           Muesco         Et. QA3137-2         N/A         RSO 5703-85	Name of Manufacturer         Name of Serial No.         Name of Board No.         Identification         Built           BS&B         70-70714         N/A         S1-MSS-CV-78         N/A           Muesco         Ht. 626197-2         N/A         RSO 5155-85         N/A           Muesco         Ht. 0A3137-2         N/A         RSO 5703-85         N/A	Name of Manufacturer         Name of Serial No.         Name of Board No.         Identification         Built         Replacement           BS&B         70-70714         N/A         S1-MSS-CV-78         N/A            Muesco         Ht. 626197-2         N/A         RSO 5155-85         N/A         Replacement           Muesco         Et. 0A3137-2         N/A         RSO 5703-85         N/A         Replacement

#### 7. Work Description:

The subject valve had leakage past the disc seating area. Replaced the valve stem and inner valve plug and seat cage. The replacement items were reconciled by Material Evaluation ME-90-035 as meeting the original construction code (Bechtel Corp Spec. BSO-503). A satisfactory VT-2 examination was conducted in conjunction with a system functional pressure test.

8.

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 920 psig Temp: N/A

).	Remarks:	None	
			(Applicable Manufacturer's Data Reports to be attached)
			CERTIFICATE OF COMPLIANCE
			CERTIFICATE OF COMPLIANCE
We cei rules o	tify that the st f the ASME C	atements n ode, Sectio	made in this report are correct and this <u>replacement</u> conforms to the on XI. (repair or replacement)
Signed	le !	Alei S	UL Supvg. ASME Codes Engineer 4/3 1991
Signed	(Owner	r or Owner	r's Designee) Title (Date)
	· ·		
			CERTIFICATE OF INSPECTION
I, tl	ne undersigned	l holding a	a valid commission issued by the National Board of Boiler and Pressure Vessel
Æ.	at a set Manhall C.	····	r Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> Norwood, <u>Massachusetts</u> have inspected the components described in this Owner's
Ret	ort during the	neriod fro	$\sigma_{m}$ $O_{1/C}/G_{0}$ to $O_{4/0}/G_{1}$ and state that to the best of
mv	knowledge and	l helief this	s repair or replacement has been performed in accordance with Section A1 of the
AS	ME Code. By s	igning this	certificate, neither the Inspector nor his employer makes any warranty, expressed epair or replacement in this Report. Furthermore, neither the Inspector nor his
or i emi	mpilea, concer plover shall be	liable in an	by manner for any personal injury or property damage or a loss of any kind arising
fro	n or connected	d with this	inspection.
Z	AC.	1	-commissions 1864 California
1	pector's Signal	ture	(State or Province, National Board)
	protor a cigina		
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Da	e April	- 7	_ 19 <u></u> 19

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

N-5 # N/A

### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> <u>As Required by the Provisions of ASME Code Section XI</u>

아이에 왜 가지 않는 것이다.

1.	Owner:	Southern California Edison Company	ASME MO:90011352 & 90011442		
		2244 Walnut Grove Ave., Rosemead, CA 91770		1	
2.	Plant:	San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92672	RS:	009-90	
3.	Work Pe	rformed by: Southern California Edison	P&ID:	5178225	
4.	System	Identification: MAIN STEAM SYSTEM (MSS)			

- 5. (a) Applicable Construction Code: ASA B31.1-1955 ; Code Classified, Class 2 Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

·						Repaired,	ASME Code
		Manufacturer	National	Other	Year	Replaced, or	Stamped
Name of	Name of	Serial No.	Board No.		Built	Replacement	Yes/No
Component	Manufacturer	Serial No.	00010				
	HOGAN	N/A	N/A	\$1-MS\$-D-943	N/A	REPAIRED	GN
SEAL POT	HUGAN	1 "/ "	1		•	•	•

#### 7. Work Description:

A special repair coupling was machined from round stock after verification of material acceptability (Ref. ME-90-002). The coupling was threaded onto the remaining threads on top of S1-MSS-D-943. The repair coupling was seal welded to S1-MSS-D-943 in accordance with weld record WR1-90-019. A square head pipe plug was verified as meeting the material specification/ construction code (Ref. ME-90-003) and was installed into the repair coupling. A VT-2 examination was performed in conjunction with a system functional pressure test.

REF. NCR SO1-P-7448

8. Tests Conducted: System Leakage [ ] System Functional [X] System Inservice [ Hydrostatic [ ] Pneumatic [ ] Other [ ]

Pressure: 555 psig Temp: N/A °F

「ちょびなみはなって」、おけてものでも知識のない感情、感情、ない思想が出していた。 しょうしょ

9. Remarks: MATERIAL EVALUATIONS ME-90-002 & 003 PERFORMED TO VERIFY ACCEPTABILITY OF MATERIALS.

(Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this \_\_\_\_\_ conforms to the rules of the ASME Code, Section XI. REPAIR (repair or replacement) Supvg. ASME Codes Engineer 4 HJZIL 1990 Signed\_ X Title (Owner or Owner's Designee) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from 12/90 to 3/28/90 and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. (1) Commissions <u>1272</u> California (State or Province, National Board) Date 4/5 19<u>50</u> Supplemental sheets in the form of lists, sketches, or drawings may Note: be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	NIS-2
OWNER'S REPORT OF	REPAIR OR REPLACEMENT
UWNER 5 REF GIVE	

		As Required by the Provisions of ASME Code	e Section XI Sheet 1	of 1	
1	Owner: Southern Calif	ornia Edison Company	ASME		90091339 90091545
1.	2244 Walnut G	Unit:	1	30037042	
2.	Plant: San Onofre Na P.O. Box 128,	clear Generating Station San Clemente, CA 92674-0128	RS:	327-90 328-90	
3.	Work Performed by:	Southern California Edison	P&ID:	517822	6 (B-7)

4. System Identification: Main Steam

- 5. (a) Applicable Construction Code: Manufacturer's Standards, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No	
24" Valve	Westinghouse	N/A	N/A	S1-MSS-PV-1650	N/A	Repaired	No	

#### 7. Work Description:

8.

- 1. MO: 90091339 Steam cutting was found on the disc seating surface. A weld repair was performed and the disc was remachined.
- 2. MO: 90091545 A crack approximately 1° by ½° deep was found in the disc hinge pin bore of the valve body. The crack was removed by grinding to sound metal. verification of complete crack removal was obtained using liquid dye penetrant surface examination. A weld repair was made and the hinge pin bore was remachined to proper tolerances. A final surface liquid dye penetrant examination was performed after machined. The Examination results were satisfactory.

Reference: NCR 90090122, WR1-90-691/WR1-90-686

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Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other []

Pressure: 560 psig Temp: N/A

•	Remarks:	None	
			(Applicable Manufacturer's Data Reports to be attached)
	•		
		. ·	CERTIFICATE OF COMPLIANCE
We cer rules o	tify that the sta f the ASME f	atements m ode, Section	ade in this report are correct and this <u>repair</u> conforms to the n XI. (repair or replacement)
Signed	NNV	me	Supvg. ASME Codes Engineer 6 MA1 1994 S Designee) Title (Date)
	(Owner	r or Uwher	s Designee)
			CERTIFICATE OF INSPECTION
Ins (Fa Re my AS or em	pectors and th actory Mutual S port during the knowledge and ME Code. By s	the State or <u>system</u> ) of <u>N</u> the period from the belief, this signing this of ruing the re- liable in any	valid commission issued by the National Board of Boiler and Pressure Vessel Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> <u>forwood Massachusetts</u> have inspected the components described in this Owner's m <u>4/28/40</u> to <u>4/30/31</u> and state that to the best of repair br replacement has been performed in accordance with Section XI of the certificate, neither the Inspector nor his employer makes any warranty, expressed pair or replacement in this Report. Furthermore, neither the Inspector nor his y manner for any personal injury or property damage or a loss of any kind arising inspection.
2	Spector's Signa	hoton_	Commissions <u>1574 California</u> (State or Province, National Board)
Da	ite <u>5/9</u>		_ 19 <u>_ </u> 19
	·····		

Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. Note: x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form. 

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·新兴性的资料,这些人们的资料。

NIS-2	
OWNER'S REPORT OF REPAIR OR REPLACEMENT	-

		As Required by the Provisions of A	ASME Code Section XI			. •
		t	Shee	t 1 of 1		
1.	Owner: Southern Califo	ornia Edison Company		E MO:	90071545	
	2244 Walnut G	rove Ave., Rosemead, CA 91	Unit:	1		
2.	Plant: San Onofre Nu P.O. Box 128, S	clear Generating Station San Clemente, CA 92674-012	s RS:	263-90	)	
3.	Work Performed by:	Southern California Edison	P&II	D: 51781	11 (E-10)	
4.	System Identification:	Reactor Coolant			•	

<sup>5. (</sup>a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-2, Code Cases: None

6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
3/4" Pipe	R/A	N/A	N/A	S1-RCP-2055- 3/4"-BH2	N/A	Repaired	No

#### 7. Work Description:

Reactor Coolant Pump "C" was removed for maintenance. To facilitate the pump removal, one existing weld on the referenced line was cut. The cut joint was rewelded in accordance with WR1-90-516. A PT examination was performed on the weld.

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2450 psig Temp: N/A

8.

<sup>(</sup>b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

	Remarks:	None	
		()	Applicable Manufacturer's Data Reports to be attached)
		· ·	••
			- OF COMPLIANCE
			CERTIFICATE OF COMPLIANCE
			the separt are correct and this <u>repair</u> conforms to the
We c	ertify that the s	tatements ma	de in this report are correct and this <u>repair</u> conforms to the (repair or replacement)
rules	of the ASME		23 ADril 197
Signe	a NN I	er or Owner's	Supvg. ASME Codes Englisher (Date)
- 0	(OWD	er or Owner's	(Designee)
			CERTIFICATE OF INSPECTION
	nspectors and Factory Mutual Report during t ny knowledge a ASME Code. B or implied, con employer shall	the State of <u>N</u> <u>Ne period from</u> and belief, this y signing this cerning the re- be liable in an ited with this	valid commission issued by the National Board of Boiler and Pressure Vessel Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> forwood, <u>Massachusetts</u> have inspected the components described in this Owner's m <u><math>OR/O7/40</math></u> to <u><math>O4/27/91</math></u> and state that to the best of repair of replacement has been performed in accordance with Section XI of the certificate, neither the Inspector nor his employer makes any warranty, expressed by manner for any personal injury or property damage or a loss of any kind arising inspection. <u><math>MSO7</math> (State or Province, National Board</u> )
	Date Ap	$nL_{27}$	7 19 91

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form. NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

	As Required by the Provisions of ASME Code Section XI							
			Sheet 1 of 1					
: 1.	Owner: Southern Cal	lifornia Edison Company	ASME MO: 901	01858				
	2244 Walnut	Grove Ave., Rosemead, CA 91770	Unit: 1					
2.	Plant: San Onofre 2 P.O. Box 122	Nuclear Generating Station 8, San Clemente, CA 92674-0128	RS: 343-90					
3.	Work Performed by:	Southern California Edison	<b>P&amp;ID:</b> 5178110 (D	2)				
4.	System Identification	a: Reactor Coolant						

- 5. (a) Applicable Construction Code: ASA B31.1-1955 Westinghouse E-Specification 675268, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial Ko.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
3/4" Globe Valve	Rockwell Edwards	N/A	N/A	S1-RCP-305	N/A	Replaced	No
3/4" Globe Valve	Rockwell International	BL269	N/A	RIP-P-341-82	N/A	Replacement	No

#### 7. Work Description:

8.

The valve currently installed required replacement. The replacement globe valve was verified to be in compliance with the original construction code as reconciled by SCE Code Reconciliation Report CR-88-008. A NDE/PT examination was conducted on the valve weld preparation end prior to installation. Installation of the replacement globe valve was performed by welding. A VT-2 examination was conducted in conjunction with a system functional pressure test.

Reference: WR1-90-724, CR-88-008, NCR 90100111

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Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2440 psig Temp: N/A

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CERTIFICATE OF COMPLIANCE         conforms to the service and this replacement (repair or replacement)         of the ASME Code, Section XL         Conforms to the service and this replacement (repair or replacement)         of the ASME Code, Section XL         Conforms to the service and this replacement (repair or replacement)         of the ASME Codes Engineer 4/2 19 9/         (Owner & Owner's Designee)         Title (Date)         CERTIFICATE OF INSPECTION         Asket to repair of replacement has been performed in accordance with Section XI of the my knowledge and belief, this repair of replacement has been performed in accordance with Section XI of the same concerning the repair or replacement in this Report. Furthermore, neither the Inspection on this employer makes any warranty, expressed from or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor this employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.         Mathematicate and pressions Mathematicate and Pressure Commissions Mathematicate and province, National Board         Date		(Applicabl	le Manufacturer's Da	ita Reports to be attached)	
certify that the statements made in this report are correct and this <u>replacement</u> conforms to the (repair or replacement) of the ASME Code, Section, XL					
certify that the statements made in this report are correct and this <u>replacement</u> conforms to the (repair or replacement) of the ASME Code, Section, XL					
tertify that the statements made in this report are correct and this <u>replacement</u> conforms to the (repair or replacement) of the ASME Code, Section XL		CFR	TIFICATE OF	<u>F COMPLIANCE</u>	
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ed <u>Supver ASME Codes Engineer</u> <u>472</u> 19 <u>97</u> (Owner for Owner's Designee) Title (Date) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from <u>10/13/90</u> to <u>41/2/91</u> and state that to the best of Massachusetts have inspector nor his employer makes any warranty, expressed ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed asME Code. By signing the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. <u>Macmanenee</u> Commissions <u>1862</u> California— (State or Province, National Board) Date <u>April 2, 19.91</u>	ertify that the	tatements made in th	his report are cor	(repair or	replacement)
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ASME SECTION XI ABSTRACT OWNER'S SUMMARY OF REPAIR OR REPLACEMENT

1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770					ASME	MO:	9012044	6	
		2244 Wa	alnut Gro	ove Ave., Rosemead,	CA 91/10		Unit:	1		
2.	Plant:	San Ono P.O. Bo	ofre Nuc x 128, Sa	lear Generating Stati an Clemente, CA 92	RS:	388-90				
3.	Work F	erformed	l by:	Southern California	Edison		P&ID:	5178110	) (C-4)	
4.	System	Identific	ation:	Reactor Coolant						
5.	Plant T	ag No.:	S1-RCP	-315	Serial No.:	N/A				
6.	Compo	nent:	Globe V	Valve	Name:	Rockwo Edward		Siz	:e:	2"
7.	Code:	Westing	ghouse E	-Spec. 675268	Class:	XI-2				

8. Purpose (Statement of Problem):

The valve requires a stop tab to retain the yoke bushing in a secure position.

## 9. Narrative Summary (Brief Description of Work Performed):

A 3" x ¼" stainless steel flat bar was attached to the valve by welding to retain the yoke in a secure position. A NDE/PT examination was conducted on the weld repair areas with no relevant indication noted.

Reference: WR1-90-813

10. Material Used:

None

Prepared By: K.L. Collins

Date: February 27, 1991

			As Required by the Provisions of ASME C	ode Section XI		
1.	Owner:	Southern Califo	rnia Edison Company rove Ave., Rosemead, CA 91770	Sheet 1 ASME		90120446
		2244 Walnut G	rove Ave., Rosemeau, CA 51110	Unit:	1	
2.	Plant:	San Onofre Nu P.O. Box 128, S	clear Generating Station San Clemente, CA 92674-0128	RS:	388-90	
3.	Work 1	Performed by:	Southern California Edison	P&ID:	5178110	(C-4)
4.	System	Identification:	Reactor Coolant			
5.	(a)	Applicable Cor Code Cases: N	struction Code: Westinghouse E-Sp	ecification 6752	268, Code	Classified XI-2,
	(b)	Applicable Edi Addenda, Code	tion of Section XI Utilized for Repa c Cases: None	irs or Replacen	nents: 19	977 Edition, S'78

NIS-2

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OWNER'S REPORT OF REPAIR OR REPLACEM As Required by the Provisions of ASME Code Section XI

6. Identification of Components Repaired or Replaced:

Name of	Name of	Manufacturer	National	Other	Year	Repaired, Replaced, or	ASME Code Stamped
Component	Manufacturer	Serial No.	Board No.	Identification	Built	Replacement	Yes/No
2" Globe Valve	Rockwell Edwards	N/A	N/A	S1-RCP-315	N/A	Repaired	No

#### 7. Work Description:

A 3" x 1/4" stainless steel flat bar was attached to the valve by welding to retain the yoke in a secure position. A NDE/PT examination was conducted on the weld repair areas with no relevant indication noted.

Reference: WR1-90-813

8. Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2490 psig Temp: N/A

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Remarks: The valve is installed in a Class 2 system.
(Applicable Manufacturer's Data Reports to be attached)
CERTIFICATE OF COMPLIANCE
We certify that the statements made in this report are correct and this <u>repair</u> conforms to the rules of the ASME Code, Section XI. (repair or replacement) Signed A March 1997 (Owner or Owner's Designee) Title (Date)
CERTIFICATE OF INSPECTION
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from <u>12/12/90</u> to <u>3/12/91</u> and state that to the best of my knowledge and belief, this repair of replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.
Inspector's Signature . (State or Province, National Board)
Date <u>March 12, 1991</u>

Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. Note: x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

9.

#### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

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1. Owner:	2244 Walnu	alifornia Edison Company t Grove Ave.	Traveler: S01-91-014		
	Rosemead,		Unit:	1	
2. Plant:	San Onofre P. O. Box	Nuclear Generating Station 128, San Clemente, CA 92674-0128	FCN:	F-5519M	
3. Work Per	formed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CWO:	91020270000 91020497000	
4. System I	dentification:	(RCP) reactor Coolant Pump System	P&ID:	5178111	

5. (a) Applicable Construction Code: ASA B16.5, 1957 ED. Code Class: XI-2

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component 1/24 Plate	Name of Manufacturer Grano Steel Corp.	Manufacturer Serial No. Heat No. V01003		Other Identification RSO# 0147-91	Year Built N/A	Repaired Replaced,or Replacement Replacement	Yes/No
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	}						
			1				

7. Work Description:

FCN F-5519M installs a flow direction indicator on value S1-RCP-CV-527, fabricates welds, TA & TB  $\,$ 

8. Tests Conducted: None

9. Remarks:

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI (Repair or Replacement)

Signed <u>UAMacondry FIELD CONST MGR</u> 3/19, 1991 (Owner or Owner's Designee) Title (Date)

# <u>CERTIFICATE OF INSPECTION</u> I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by \*Arkwright Mutual Insurance Company of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>2//3/G/</u> to <u>3//9/4/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System <u>Mathematican</u> Commissions <u>BbD CA</u> (State or Province, National Board Date <u>Masch 19</u>, 1991

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

Page 2 of 2

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# OWNER'S REPORT OF REPAIR OR REPLACEMENT

	As Required by the Provisions of ASME Code Section XI						
			Sheet 1	011			
1.	Owner: Southern Calif	er: Southern California Edison Company		MO: 90022761			
	2244 Walnut Grove Ave., Rosemead, CA 9		Unit:	1			
2.	Plant: San Onofre N P.O. Box 128,	uclear Generating Station San Clemente, CA 92674-0128	RS:	119-90			
3.	Work Performed by:	Southern California Edison	P&ID:	5178110 (G-5)			
4.	System Identification:	Reactor Coolant					

Applicable Construction Code: Westinghouse E-Spec. 676044, Code Classified: XI-2, 5. (a) Code Cases: None

Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 **(b)** Addenda, Code Cases: None

#### Identification of Components Repaired or Replaced: 6.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" Control Valve	BS&B	70-71395	N/A	S1-RCP-FCV-1115C	N/A		No
Valve Stem	Muesco	Et. A11160	N/A	RSO 6628-85 Part 347265	N/A	Replacement	No
Inner Valve	Muesco	Et. 181051089	N/A	RSO 1541-86 Part 205804	N/A	Replacement	No

#### 7. Work Description:

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8.

The valve required to be overhauled to minimize seat leakage. The stem assembly (stem, inner valve and pin) was replaced. The replacements were verified to be in compliance with the original construction code. After installation, a VT-2 examination was conducted in conjunction with a system functional pressure test.

Reference: NCR SO1-P-7315, ME-90-30

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Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2400 psig Temp: N/A

		(Applicable Ma	nufacturer's Data Re	ports to be attached	)	
•		<u>CERTIFI</u>	CATE OF CO	OMPLIANCE	4	
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1eu((	Owner or Own	er's Designee)		Title	(Date)	
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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		ومراقب المستحجين والمراقب	<u>S REPORT OF REPAIR OR I</u>		<u>EMENI</u>	
			As Required by the Provisions of ASME Code			
				Sheet 1	of 1	
1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770		rnia Edison Company	ASME	91020903001	
		2244 Walnut Gr	ove Ave., Rosemeau, CA 91/10	Unit:	1	
2.	Plant:	San Onofre Nuc P.O. Box 128, S	lear Generating Station an Clemente, CA 92674-0128	RS:	034-91	
3.	Work I	Performed by:	Southern California Edison	P&ID:	5178111	. (C-3)
4.	System	Identification:	Reactor Coolant Pump Seal Water			

# NIS-2

Applicable Construction Code: ASA B31.1, 1955 Edition (piping), Code Classified XI-2, Code (a) Cases: None

Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 **(b)** Addenda, Code Cases: None

Identification of Components Repaired or Replaced: 6.

ſ	Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
1"	Rupture Disc	N/A	N/A	N/A	S1-RCP-PSE-11171	N/A	Replaced	No
1"	Rupture Disc	Fike	EX1581101	N/A	RSO 0379-91	N/A	Replacement	No

7. Work Description:

5.

8.

The rupture disc was replaced. The replacement was verified as being compatible with the installation and system requirements.

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Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 18 psig Temp: N/A

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9.	Remarks:	None
		(Applicable Manufacturer's Data Reports to be attached)
		CERTIFICATE OF COMPLIANCE
We cer rules of	tify that the stat f the ASME Coo	ments made in this report are correct and this <u>replacement</u> conforms to the (repair or replacement)
Signed	NIN	<u>Quer's Designee</u> Supvg. ASME Codes Engineer 21 March 19 9/ Title (Date)
	(Owner (	Gwner's Designee)
		CERTIFICATE OF INSPECTION
Insr (Fa Rer my ASI or i em] from	bectors and the <u>ctory Mutual Sys</u> bort during the p knowledge and b ME Code. By sig mplied, concerning ployer shall be lia	blding a valid commission issued by the National Board of Boiler and Pressure Vessel State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> em) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's riod from <u><math>2/14/91</math></u> to <u><math>3/21/91</math></u> and state that to the best of elief, this repair or replacement has been performed in accordance with Section XI of the ing this certificate, neither the Inspector nor his employer makes any warranty, expressed ag the repair or replacement in this Report. Furthermore, neither the Inspector nor his ble in any manner for any personal injury or property damage or a loss of any kind arising ith this inspection. <u>Commissions 1862</u> California (State or Province, National Board)
Dat	te <u>Mari</u>	<u>1991</u>

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

		As Required by the Housiens of Finite Cont		
			Sheet 1 of 1	
1.	Owner: Southern Califo	ornia Edison Company	Traveler: S01-91-019	
	2244 Walnut G	rove Ave., Rosemead, CA 91770	Unit: 1	
2.	Plant: San Onofre Nu P.O. Box 128, S	clear Generating Station San Clemente, CA 92674-0128	DCP: 1-3518.00SN	
3.	Work Performed by:	Bechtel Construction Company P.O. Box 450	<b>CWO:</b> 91012230000	
		San Clemente, CA 92674-0128	P&ID: 5178025	
4.	System Identification:	Reactor Coolant Pump Seal Water	(RCP)	
5.	(a) Applicable Con	struction Code: ASA B31.1, 1955 Ed.	Code Class: XI-2	

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT As Required by the Provisions of ASME Code Section XI

- Addenda, Code Cases: N/A
- Identification of Components Repaired or Replaced: 6.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Rupture Disk 1° Disk	Fisk	N/A .	N/A	RSO #0270-91 S1-RCP-PSE-1117B	N/A	Replaced	No

Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78

#### Work Description: 7.

**(b)** 

DCP 1-3518.00SN & NCR 91010138 replaced rupture disk S1-RCP-PSE-1117B with inkind part and performed a system functional test.

Tests Conducted: System Leakage [] System Functional [√] System Inservice [] Hydrostatic [] 8. Pneumatic [] Other [] Pressure: 23 psig

21 1 化合物试验 机合理输出 意义 网络拉拉拉拉拉拉拉拉拉拉拉拉拉 uli sinasta a sposo contratores de la g

Documentation for items listed in Block 6 are available on site. 9. **Remarks:** (Applicable Manufacturer's Data Reports to be attached) CERTIFICATE OF COMPLIANCE We certify that the statements made in this report are correct and this <u>replacement</u> \_ conforms (repair or replacement) to the rules of the ASME Code, Section XI. FIELD CONSTRUCTION MONZ 3/27 1991 20) Title (Date) Signed CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from 02/22/91 to 03/29/91and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. lend Commissions 1564 California (State or Province, National Board) Inspector's Signature March 29 19-91

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	OWNER	NIS-2 <u>'S REPORT OF REPAIR OR</u> As Required by the Provisions of ASME Code		MENT	-
			Sheet 1	of 1	
1.	Owner: Southern Calif	ornia Edison Company	Travele	r: S01-91-018	
	2244 Walnut C	brove Ave., Rosemead, CA 91770	Unit:	1	
2.	Plant: San Onofre No P.O. Box 128,	uclear Generating Station San Clemente, CA 92674-0128	DCP:	1-3518.00SN	
3.	Work Performed by:	Bechtel Construction Company	CWO:	91012241000	
		P.O. Box 450 San Clemente, CA 92674-0128	P&ID:	5178025	
4.	System Identification:	Reactor Coolant Pump Seal Water	(RCP)		
5.	(a) Applicable Con	nstruction Code: ASA B31.1, 1955 Ed	. Code Class	: XI-2	

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- (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Rupture Disk 1° Disk	Fisk -	N/A		S1-RCP-PSE1117B RS0 #0270-91	N/A	Replaced	No

#### 7. Work Description:

DCP 1-3518.00SN & NCR 91010138 replaced rupture disk S1-RCP-PSE-1117B with inkind part and performed a system functional test.

8. Tests Conducted: System Leakage [] System Functional [√] System Inservice [] Hydrostatic [] Pneumatic [] Other []

Pressure: 23 psig

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Documentation for items listed in Block 6 are available on site.

(Applicable Manufacturer's Data Reports to be attached)
CERTIFICATE OF COMPLIANCEWe certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI.conforms (repair or replacement)Signed <u>MAMacanny</u> FIELD CONSTRUCTION MG2 $3/27$ 1971 (Owner or Owner's Designee)Title
CERTIFICATE OF INSPECTION         I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure         Vessel Inspectors and the State or Province of <u>California</u> employed by <u>Arkwright Mutual Insurance</u> Company (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from $0.24241$ to $0.342491$ and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.         Mutual System) 19_91         Date Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematical Mathematine Mathematical Mathematical Mathematical Ma

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9.

**Remarks:** 

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

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Pr : 1

	As Required by the Provisions of AS!	ME Code Section XI
		Sheet 1 of 1
1.	Owner: Southern California Edison Company	ASME MO: 90103081
	2244 Walnut Grove Ave., Rosemead, CA 9177	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	RS: 309-90
3.	Work Performed by: Southern California Edison	P&ID: 5178130-11 (B-10)
4.	System Identification: Residual Heat Removal	

- Applicable Construction Code: ASA B31.1, 1955 Edition, Westinghouse E-Specification 675268, (a) Code Classified XI-2, Code Cases: None
  - Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 **(b)** Addenda, Code Cases: None

#### Identification of Components Repaired or Replaced: 6.

Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Crane-Aloyco	Model CF8M7B	N/A	S1-RHR-029	N/A		No
Crosby	A9176	N/A	RSO 3028-90		Replacement	No
Crosby	A9177	N/A	RSO 3028-90	 	Replacement	No
	Manufacturer Crane-Aloyco Crosby	Manufacturer         Serial No.           Crane-Aloyco         Model CF8M7B           Crosby         A9176	Manufacturer         Serial No.         Board No.           Crane-Aloyco         Model CF8M7B         N/A           Crosby         A9176         N/A	Name of Manufacturer         Frantiscipies         Board No.         Identification           Crane-Aloyco         Model CF8M7B         N/A         S1-RHR-029           Crosby         A9176         N/A         RSO 3028-90	Name of Manufacturer         Hanufacturer         Namufacturer         Board No.         Identification         Built           Crane-Aloyco         Model CF8M7B         N/A         S1-RHR-029         N/A           Crosby         A9176         N/A         RSO 3028-90         Image: Crosby A9176	Name of Manufacturer Serial No.Manufacturer Board No.National Board No.Other IdentificationYear BuiltReplaced, or ReplacementCrane-AloycoModel CF8M7BN/AS1-RHR-029N/ACrosbyA9176N/ARSO 3028-90Replacement

#### 7. Work Description:

5.

Valve leaked past its seat due to galled valve disc and required replacement. The valve disc assembly consists of male (P/N B59CA00125) and female (P/N B59CA00130) assembly. The replacement disc assembly was verified to be in compliance with the original construction code as reconciled by SCE Material Reconciliation Report ME-90-71.

Reference: NCR S01-P-7406

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Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other []

Pressure: 355 psig Temp: N/A

			(Applicable Man	nufacturer's Dat	a Reports to be a	ttached)		
	·							
			CERTIFI	CATE OF	COMPLIA	NCE		
'e cei iles o	rtify that the st f the ASME (	tatements m Code, Section	ade in this reg n XI.	port are corre	ect and this(re	replacer epair or r	nent eplacement)	conforms to the
gned		Main	lele_	Supvg. ASM	AE Codes Eng	ineer	43	_19_9/
-	(Owne	r or Owner	's Designee)		Title		(Date)	
			,					
I, t	he undersigned	d holding a	valid commiss	sion issued by	nnioved by Al	rkwright J	<u>Mutuai Insui</u>	Pressure Vessel
(Fa Rej my AS	pectors and the actory Mutual Sectory Mutual Sectory Mutual Sector port during the knowledge and ME Code. By sector Sector Sector multical concerns	ne State or <u>System</u> ) of <u>N</u> e period from d belief, this signing this of pring the re-	orwood, Mass n <u>10/26/9</u> repair or repl certificate, neil nair, or replace	achusetts have <u>acement</u> to acement has ther the Inspe ement in this	inspected the $3/21/91$ been performe ctor nor his en Report. Further	d in accor nployer m	and state that dance with S akes any war neither the Ir	at to the best of ection XI of the ranty, expressed aspector nor his
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(Fa Rej my AS or em fro	pectors and the <u>actory Mutual S</u> port during the knowledge and ME Code. By s implied, conce ployer shall be	the State or System) of N e period from d belief, this signing this of rning the re- liable in any d with this in Signing the re-	orwood, Mass n <u>10/20</u> repair or repl certificate, neit pair or replace y manner for a	achusetts have acement has be ther the Inspe- ement in this iny personal in ons <u>1574</u>	inspected the $3/21/91$ been performe ctor nor his en Report. Further	d in accor aployer m hermore, ty damag	and state that dance with So akes any warn neither the Ir e or a loss of	at to the best of ection XI of the ranty, expressed aspector nor his

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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		NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACE</u> <u>As Required by the Provisions of ASME Code</u>	MENT Sectio	<u>n XI</u>
1.	Owner:	Southern California Edison Company	ASME M	<b>0:</b> 89070307001
		2244 Walnut Grove Ave., Rosemead, CA 91770	Unit:	1
2.	Plant:	San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92672	RS:	375-89
3.	Work Pe	erformed by: Southern California Edison	P&ID:	5178130
4.	System	Identification: Residual Heat Removal		

13 8.2

- Applicable Construction Code: ASME Section VIII, 1962 Ed., Winter 64 Add. 5. (a) Code Cases: 1270N
  - Applicable Edition of Section XI Utilized for Repairs or Replacements: (b) 1977 Edition, S'78 Addenda, Code Cases: None
- Identification of Components Repaired or Replaced: 6.

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification		Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Heat Exchanger	EFCO	S-13205-B	N/A	S1-RHR-E-21B	N/A		Yes
Studs SA-193 B7	LTV/Hub	N/A	N/A	Heat Code: 81 Heat #8098719 RSO #1184-89	N/A	Replacement	No
Nuts SA-194 2H	Hamanaka/A&G	N/A	N/A	Heat Code: ADD Heat #D36374 RSO #8370-84	N/A	Replacement	No

7. Work Description: Heat Exchanger head flange bolting is deteriorated due to boric acid leaks and was replaced.

New West and the second <u>NCR #S01-P-7255</u>

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Tests Conducted: System Leakage [ ] System Functional [X] System Inservice [ ] Hydrostatic [ ] Pneumatic [ ] Other [ ] Pressure: 358 psig Temp: N/A <sup>O</sup>F 8.

9. Remarks: None

(Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI. (repair or replacement) Signed <u>Supvg. ASME Codes Engineer 29 JAN 19 90</u> (Owner or Owner's Designee) Title (Date)

CERTIFICATE OF INSPECTION
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company (Factory Mutual</u> <u>System)</u> of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from $2/3/83$ to $1/2s/93$ and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.
Commissions <u>1272</u> California Chaspector's Signature (State or Province, National Board)
Date <u>2/5</u> 19 <u>90</u>
the complemental charter in the form of lists skatches or drawings may

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	NIS-2 OWNER'S REPORT OF REPAIR OR	
	As Required by the Provisions of ASME Cod	
		Sheet 1 of 1
1.	Owner: Southern California Edison Company	ASME MO: 88090529
	2244 Walnut Grove Ave., Rosemead, CA 91770	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	RS: 382-88
3.	Work Performed by: Southern California Edison	P&ID: 5178130 (B-7)

4. System Identification: Residual Heat Removal

(a) Applicable Construction Code: Westinghouse E675198, Code Classified XI-2, Code Cases: None

- (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
6" Gate Valve	Crane	N/A	N/A	S1-RHR-MOV-822A	N/A		No
Leak-off Plug	Eub	Et. 165935	N/A	RSO 2252-67	N/A	Replacement	No

#### 7. Work Description:

5.

8.

A design change was initiated to allow for the installation of Chesterton live load packing. This required the installation of an unthreaded plug to replace the packing gland leak-off line. The plug material (SA-479, TP316) was verified as being compatible with the installation and system requirements. The plug was machined to proper tolerances and installed by welding. A NDE(PT) examination was conducted on the weld area with no relevant indications noted. After installation a VT-2 examination was conducted at system operating pressure with no leakage noted.

Reference: FCN S5319, WR1-88-906

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 355 psig Temp: N/A

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9.	Remarks:	None				
		(Appl	licable Manufactur	er's Data Reports t	o be attached)	
		·				
		CE	RTIFICATE	E OF COMP	LIANCE	
We cer rules o	tify that the st f the ASME C	atements made in code, Section XI.			(repair or rep	lacement)
Signed	RIN	Uhre	Supv	g. ASME Code	s Engineer 30	April 1991
0		r or Owner's Des	signee)	Title		(Date)
		CI	ERTIFICAT	E OF INSPE	ECTION	
Insp (Fac Rep my ASN or i emp	bectors and the <u>ctory Mutual S</u> port during the knowledge and ME Code. By s mplied, concer ployer shall be	e State or Provi vstem) of <u>Norwoo</u> period from <u>3</u> belief, this repair igning this certific ning the repair o	nce of <u>Californ</u> od. <u>Massachuser</u> od. <u>Massachuser</u> of <u>G</u> r or replacement cate, neither the r replacement is ner for any pers	<u>hia</u> , employed b <u>ts</u> have inspecte to <u>4</u> thas been perfected Inspector nor b n this Report.	by <u>Arkwright Mi</u> d the component <u>30/9/</u> au ormed in accorda is employer mak Furthermore, ne	toiler and Pressure Vessel <u>utual Insurance Company</u> s described in this Owner's and state that to the best of ance with Section XI of the es any warranty, expressed ither the Inspector nor his or a loss of any kind arising
		when co				
Ins	pector's Signal	ure	(State	e or Province, N	lational Board)	
	: .				×	
D-1	and	32 10	91	n an the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s		· ·
	e April		7/	·····	• •	
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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### NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

	As Required by the Provisions of ASME C	Lode Section XI
		Sheet 1 of 1
1.	Owner: Southern California Edison Company	ASME MO: 88100558
	2244 Walnut Grove Ave., Rosemead, CA 91770	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	<b>RS:</b> 383-88
3.	Work Performed by: Southern California Edison	P&ID: 5178130 (C-7)
4.	System Identification: Residual Heat Removal	

(a) Applicable Construction Code: Westinghouse E675198, Code Classified XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

6. Identification of Components Repaired or Replaced:

Γ	Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
6	Gate Valve	Crane	N/A	R/A	S1-RHR-MOV-822B	N/A		No
ī	Plug	H&D Steel	Ht. 98249	N/A	RSO 1601-90	N/A	Replacement	No

#### 7. Work Description:

5.

A design change was initiated to allow for the installation of Chesterton live load packing. This required the installation of an unthreaded plug to replace the packing gland leak-off line. The plug material (SA-479, TP316) was verified as being compatible with the installation and system requirements. The plug was machined to proper tolerances and installed by welding. A NDE(PT) examination was conducted on the weld area with no relevant indications noted. After installation a VT-2 examination was conducted at system operating pressure with no leakage noted.

 $\Omega^{*}$ 

Reference: FCN S5319, WR1-88-907

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 355 psig Temp: N/A

9. Remarks: None
(Applicable Manufacturer's Data Reports to be attached)
CERTIFICATE OF COMPLIANCE
We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code Section XI. (repair or replacement)
Signed <u>And</u> <u>Supvg. ASME Codes Engineer</u> <u>30</u> <u>April</u> <u>19</u> <u>(Date)</u>
CERTIFICATE OF INSPECTION
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u>
(Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from $G/G/90$ to $H/30/90$ and state that to the best of
my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the
ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his
employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.
- Oct
<u>Inspector's Signature</u> (State or Province, National Board)
Date <u>April 30, 1991</u>

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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_			As Ke	quired by the Flow		Code Section XI Sheet	1 of 1	<u> </u>	
•	Owner:	Southern Calif	ornia E	idison Company	y		E MO:	90081960001	
		2244 Walnut C	Grove A	ve., Rosemead,	, CA 91770	Unit:	1		
•	Plant:	San Onofre N P.O. Box 128,	uclear ( San Cl	Generating Stat emente, CA 92	ion 2674-0128	RS:	331-90		
	Work F	erformed by:	Sout	hern California	Edison	P&ID	: 5178150	) (B-3)	
l.	System	Identification:	Rea	ctor Cycle Samj	pling				
	System (a)		onstruct	tion Code: Wes		quipment Specif	cation 676	044, Code Class	ifed
I. 5.	·	Applicable Co XI-2, Code C	onstruct ases: N lition o	tion Code: Wes None f Section XI Ut	tinghouse Ed			044, Code Class 977 Edition, S'7	
	(a) (b)	Applicable Co XI-2, Code C Applicable Eo Addenda, Co	onstruct ases: N lition o de Case	tion Code: Wes None f Section XI Ut	tinghouse Ed			977 Edition, S'7	8
i.	(a) (b)	Applicable Co XI-2, Code C Applicable Eo Addenda, Co Ication of Com	onstruct ases: N lition o de Case ponents	tion Code: Wes Ione f Section XI Ut es: None	tinghouse Ed		ements: 1 Year		

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

7: Work Description:

Stem/Disc Assembly

The stem/plug assembly of the valve was replaced with an in-kind replacement. The valve was reassembled in accordance with procedure SO1-I-6.59.

N/A

RIP# P-506-81

316 SS/#6 Stellite N/A

Replacement

No

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] 8. .. Pneumatic [] Other [] Pressure: 2085 psig Temp: 648 °F

in definition of the posterior start was performing as presented with the provider of the construction 

Ht. 822426-4

Mason-Neilan

9.	Remarks:	None		
•			(Applicable Manufacturer's Data Reports to be attached)	
			CERTIFICATE OF COMPLIANCE	
We cer rules of	tify that the st f theyASME C	atements m oden Section	ade in this report are correct and this <u>replacement</u> conforms to the (repair or replacement)	
Signed_	RN	Um	<u>Supvg. ASME Codes Engineer</u> 23 Ap. 1997 (Date) Title (Date)	
	(Owne)			
			CERTIFICATE OF INSPECTION	
1 +		- 64-4	valid commission issued by the National Board of Boiler and Pressure Vessel Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u>	
(Fa	ctory Mutual S	vstem) of N	orwood, Massachusetts have inspected the components described in this evider of	
Rep	ort during the	period from	$n = \frac{10/2.140}{10}$ to $\frac{47/2.0777}{10}$ and state that to the best of repair or replacement has been performed in accordance with Section XI of the	
1 4 61	AC Code Due	ioning this c	ertificate neither the inspector nor his employed makes any warrancy, expressed	
ori	mplied, concer	ning the replicable in any	pair or replacement in this Report. Furthermore, neither the Inspector nor his manner for any personal injury or property damage or a loss of any kind arising	
fro	n or connected	i with this i	nspection.	
	ind	, Ť.	_ Commissions California 1574	
- Cliff In:	pector's Signa	<u>alan</u>	(State or Province, National Board)	
	1	2	•	
Dat	e foril A	<u> </u>	_ 19 <u>_ 9/</u>	
	7.			

Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each Note: sheet is numbered and the number of sheets is recorded at the top of this form.

#### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> <u>As Required by the Provisions of ASME Code Section XI</u>

State State

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****			3293\$1;3398243;3203127733333		
1.	Owner:		nia Edison Company	Travel	er: ASME MO
		2244 Walnut Grov	e Ave., Rosemead, CA 91770	Unit:	1
2.	Plant:	San Onofre Nucle P.O. Box 128, Sa	ar Generating Station n Clemente, CA 92672	MERS:	309-89
3.	Work Pe	rformed by: Sout	hern California Edison	M.O.:	89051750
4.	System	Identification:	Reactor Cycle Sampling System (RSS)	P&ID:	5178150-7 (E-3)

- 5. (a) Applicable Construction Code: Westinghouse E-Spec. 676044; ASA B31.1 -1955 Edition Code Cases: N/A Code Classified: XI-2
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: N/A
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification		Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
5/8" Studs (6)	N/A	N/A	N/A	\$1-R\$\$-CV-955		Replaced	No
5/8" Nuts (6)	N/A	N/A	N/A	S1-RSS-CV-955		Replaced	No
3.8".065 Wall Tubing	N/A	N/A	N/A	RSS-5026-3/4"- BH2		Replaced	No
5/8" Studs (6)	8&G Mfg.	Ht. No. 57038 Mark "AJM" P/N 971511 - 012-158	N/A	RSO-0743-88		Replacement	No
5/8" Nuts (6)	Masonelian	P/N 971511- 0660187	N/A	RS0=0759-88		Replacement	No
3/8" OD x .065 MW Smis Tube	Sandvik	Ht. No 460342	N/A	RSS-5026-3/4"- BH2/RS0-1760-89	1989	Replacement	No

7. Work Description:

1. Verified replacement studs, nuts and tubing meets the original

design/construction code.

2. Removed S1-RSS-CV-955 from system per WR1-89-403.

3. Removed existing studs and nuts from valve body and installed replacement studs.

- 4. Reinstalled S1-RSS-CV-955 back into system per WR1-89-403.
- 5. Performed post-weld NDE (PT).
- 6. Installed replacement nuts.
- 7. Performed System Functional Pressure Test with VT-2 Examination.

REFERENCE: NCR's S01-P-7245 & S01-P-7260; ME-89-034

8. Tests Conducted: System Leakage [] System Functional [x] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2080 psig Temp: 540°F 9. Remarks: None

(Applicable Manufacturer's Data Reports to be attached)

#### CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this **Replacement** conforms to the rules of the ASME Code, Section XI. (repair or replacement) Signed <u>Al Marilla (Supvg. ASM</u> (Owner or Owner's Designee) (Supvg. ASME Codes Engineer) 7/5 1989 Osignee) Title (Date) Title CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual <u>System</u>) of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from  $\frac{19199}{199}$  to  $\frac{7}{59}$  and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. <u>Juspector's Signature</u> Commissions /<u>272California</u> (State or Province, National Board) Date 7/s 1989 Supplemental sheets in the form of lists, sketches, or drawings may Note: be used provided (1) size is 8-1/2 in. x 11 in., (2) information in ا میں بیریں ایک ادار بیریں Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form. 

		<u>S REPORT OF REPAIR OR</u>		EMENT	
		As Required by the Provisions of ASME Cod	e Section XI Sheet 1	. of 1	
1.	Owner: Southern Califor	rnia Edison Company	ASME	MO: 89101012	
	2244 Walnut Gr	ove Ave., Rosemead, CA 91770	Unit:	1	
2.	Plant: San Onofre Nuc P.O. Box 128, S	clear Generating Station an Clemente, CA 92674-0128	RS:	265-90	
3.	Work Performed by:	Southern California Edison	P&ID:	5178150 (D-3)	
4.	System Identification:	Reactor Cycle Sampling			

NIS-2 WNER'S REPORT OF REPAIR OR REPLACEMENT

5. (a) Applicable Construction Code: Westinghouse E-spec 676044, Code Classified XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

# 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
3/8" Control Valve	Masoneilan	R/A	N/A	S1-RSS-CV-955	R/A		No
Stem/Plug	Masoneilan	Et. 1810-6- 1024	N/A	RIP P-506-81	N/A	Replacement	No

#### 7. Work Description:

During disassembly and inspection, it was discovered that the stem/plug assembly required replacement. Replaced valve stem/plug. The replacement was verified to be in compliance with the original construction code. After assembly a system functional pressure test was performed with a VT-2 examination with no leakage noted.

8. Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 2080 psig Temp: N/A

•	Due December 4
	(Applicable Manufacturer's Data Reports to be attached)
	CERTIFICATE OF COMPLIANCE
Ne ce	conforms to the
ules	of the ASME Code, Section XI. (repair or replacement)
Signe	July Supre ASME Codes Engineer 21 March 1991
ngnev	(Owner or Owner's Designee) Title (Date)
	CERTIFICATE OF INSPECTION
I, 1	the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel spectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u>
<u>(F</u>	actory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner's
Re	proof during the period from $8/17/90$ to $32/19/10$ and state that to the best of
my AS	knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the SME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed
OI	implied concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his
en	ployer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising
fro	om or connected with this inspection.
	Chilpaniston Commissions -1862 California
Ir	(State or Province, National Board)
_	ate <u>March 21, 1991</u>
l Di	ate

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

# ASME Section XI Abstract Owner's Summary of Repair or Replacement

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		*				
1. Owner	Southern Cal 2244 Walnut Rosemead, CA	ifornia Edison Grove Ave.	Company		1er: S01-90	
2. Plant	San Onofre 1 P. O. Box 12	Nuclear Generat 28, San Clement	ing Station e, CA 92672		F5437M	
3. Work	Performed by:	Bechtel Constr P. O. Box 450 San Clemente,		CWO:	9012159200 9012107600	
4. Syste	m Identification:	Reactor Cycle	Sampling System (	RSS) <b>P&amp;ID:</b>	5178150	
5. Plant	Tag No.: S1-RSS-C	V-956	Serial No.:	N/A		
6. Compo	nent:(See NIS-2)		Name: (See NIS-2	) Size: 3	/8"	
7. Code:	ASA B31.1, 1955 E	d. Class: XI	-2			
	se (Statement of P				·	
Assoc	714478 Item 600). iated DWGs: 714478 tive Summary (Brie			:	•	
1.)	The appropriate de construction code	ocuments were re			with the ap	oplicab
2.)	Tubing was replac WR-5A weld record	ed in accordan s SG and SH.	ce with FCN F5437	M and in	accordance	with t
3.)	A system hydrosta	tic test with V	T-2 was performed	•		
10. Mate	rial Used:				. 1	
See M	IS-2		•	·	:	
				· · ·	- 	

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Date 02/05/91

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT As Required by the Provisions of ASME Code Section XI

. Owner:	Southern 2244 Waln	California Edison Company ut Grove Ave.	Trave	ler: S01-90-03
	Rosemead,	CA 91770	Unit:	1
. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	FCN:	F5437M
. Work Perf	ormed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90121592000 90121076000
. System Id	entification	:	P&ID:	5178150

5. (a) Applicable Edition of Section XI Utilized for Repairs or Replacements:

(b) 1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	  Name of  Manufacturer	Manufacturer  Serial No.	National Board No.	Other Identification	  Year  Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
3/8" X .065 Tube	Plymouth Tube Co.	HT #TV3130	N/A	Item #605   RSO #4996-86	N/A	Replacement	No
<u></u>							

#### 7. Work Description:

FCN F5437M replaces 3/8" tubing between Tee (DWG #714478, Item 603) and adapter (DWG. #714478, Item 600) and adaptor (DWG #714478, Item 600); Fabricates welds SG and SH; performs system hydrostatic test.

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [x] Pneumatic [] Other [] Pressure: 3125 psig Temp: 66 °F

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#### 9. Remarks:

# Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this replacement conforms to the rules of the ASME Code, Section XI (Repair or Beplacement) Fig. Const. Mc2 Signed  $\frac{7-2}{(Owner or Owner's Designee)}$  Title (Date)

### CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>14/21/92</u> to <u>2/9/9/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

<u>Inspector's Signature</u> Commissions <u>1862</u> <u>CA</u> (State or Province, National Board Date Fibruary 9, 1991

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

Page 2 of ?

ASME Section XI Abstract Owner's Summary of Repair or Replacement

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l. Owner:	2244 Walnu	alifornia Edison Company t Grove Ave.	Traveler: S01-90-036
	Rosemead,	CA 91770	Unit: 1
2. Plant:	San Onofre P. O. Box	Nuclear Generating Station 128, San Clemente, CA 92672	FCN F5389M
3. Work Pe	erformed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	<b>CWO:</b> 90121592000 90111183000
4. System	Identification:	Reactor Cycle Sampling System	(RSS) P&ID: 5178150
5. Plant 1	Tag No.: S1-RSS	-CV-956 Serial No.:	N/A
	ent: (See NIS-2		S-2) Size: 3/8"
7. Code: /	ASA B31.1, 1955	Ed. Class: XI-2	
8. Purpos	e (Statement of	Problem):	
FCN F5	389M Relocated V	alve S1-RSS-CV-956	
Associa	ated Dwgs.: 7144	78	
		· .	
	•		
9. Narrat	ive Summary (Bri	ef Description of Work Performe	
1.)	The appropriate construction cod	documents were reviewed to verify le.	y compliance with the applicab

2.) Valve S1-RSS-CV-956 was relocated in accordance with FCN F5389M and in accordance with the WR-5A weld records, SC, SD, SE & SF.

Date

02/05/91

3.) A system hydrostatic test with VT-2 was performed.

Les Tavlor

10. Material Used:

See NIS-2

Prepared by:

#### **NIS-2** <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> <u>As Required by the Provisions of ASME Code Section XI</u>

		******	
1. Owne	2244 Walnut Grove Ave.	Trave	ler: S01-90-036
	Rosemead, CA 91770	Unit:	1
2. Plan	nt: San Onofre Nuclear Generating Station P. O. Box 128, San Clemente, CA 92672	FCN:	F5389M
3. Work	c <b>Performed by:</b> Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90121592000 90111183000
4. Syst	cem Identification:	P&ID:	5178150
5. (a)	Applicable Construction Code: ASA B31.1, 1955 Ed., C	code Cla	ass: XI-2

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

ا با این مربق ایران در این در این در این در این در می ورویی مربق کرد این از مطور و افرود و موجود ارتقاد این مقو این این دادوس ایران در این در این در این در مطالب مربق می محمد کرد این از مطور و افرود و موجود از مقد این مقود ک

Name Component	Name of Manufacturer	Manufacturer Serial No.	  National  Board'No.	  Other  Identification	Year Built	Repaired Replaced,or Replacement	
3/8" Tube Union	Parker  Hannifin_Co.	HT # 7600	N/A	Item #604   RSO #3471-90	N/A	Replace	No
	· · ·			· · · ·			
					l.		
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7. Work Description:

FCN F5389M relocates valve S1-RSS-CV-956; fabricates welds SC, SD, SE and SF; Performs sytem hydrostatic test.

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8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] Pneumatic [] Other [] Pressure: 3125 psig Temp: 66 °F

9. Remarks:

# Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI (Repair or Replacement) Signed <u>Tz Mult</u> Fince. (Owner or Owner's Designee) Title (Date)

# CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from (2/2)(2/2)(2/2) to (2/9/9) and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

<u>ik houndon</u> Commissions	<u>1812 CA</u>
Inspector's Signature	(State or Province, National Board
Date Frennang 9, 1991	

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

NIS-2	
OWNER'S REPORT OF REPA	IR OR REPLACEMENT

As	Required	by the	Provisions	of ASME	Code	Section $\mathbf{X}$	I

_			Sheet 1	of 1	
1.	Owner: Southern California Edison Company		ASME		
	2244 Walnu	n Grove Ave., Rosemead, CA 91770	Unit:	1	
2.	Plant: San Onofre P.O. Box 1	2 Nuclear Generating Station 28, San Clemente, CA 92674-0128	RS:	217-90	
3.	Work Performed by	: Southern California Edison	P&ID:	5178270 (H-3)	
4.	System Identification	on: Secondary Chemical Feed			

- Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-2, Code Cases: (a) None
  - Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 (b) Addenda, Code Cases: None
- Identification of Components Repaired or Replaced: 6.

ſ	Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
1	Check Valve	Parker Eannifin	N/A	N/A	S1-SCF-358	R/A	Replaced	No
's '	Check Valve	Parker Bannifin	81673	N/A	RSO 1864-90 Et. 1BAN	5/A	Replacement	No

7. Work Description:

5.

1 1 1

The 3" Nupro check valve was replaced per FCN S5177M. The replacement valve was reconciled with the original construction code.

References: NCR 9005005701, FCN S5177M, CR-90-001

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one lasteres a sugarcase correct.

8. Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 915 psig Temp: N/A

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<u>.</u> . . . .

		(/	Applicable Manufa	cturer's Data F	Reports to be at	tached)		
			<u>CERTIFIC</u>	TE OF C	OMPLIA	NCE		
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	(Owner o	or Owner's	Designee)		Title		(Date)	
			CERTIFIC	ATE OF	INSPECT	ION		
							f Boiler and	Pressure Vessel
•		Casas an D	alid commission	issued by t	the National	Board o	WILLIAM INSU	nance company
Inspector	s and the	State or F	alid commission Province of <u>Cal</u>	n issued by t <u>ifornia</u> , emp	the National ployed by <u>A</u>	Board o rkwright compone	ents describe	d in this Owner's
Inspector (Factory	s and the Mutual Svs	State or F tem) of Nor	alid commission Province of <u>Cal</u> rwood Massach	n issued by t <u>ifornia</u> , emp nusetts have i	the National ployed by <u>A</u> inspected the <i>14/2/</i>	Board o rkwright compon	ents describe and state th	d in this Owner's hat to the best of
Inspector (Factory Report d my know	s and the <u>Mutual Sys</u> uring the p ledge and b ode By sig	State or F <u>(tem)</u> of <u>No</u> period from pelief, this r	alid commission Province of <u>Cal</u> <u>rwood, Massach</u> <u>7/19/9</u> repair or replace	issued by t ifornia, emp <u>nusetts</u> have <u>to</u> to ment has be the Inspect	the National ployed by <u>Au</u> inspected the <u><u>H</u><u>12</u> cen performe for nor his en</u>	Board or rkwright compone 9/ d in acco aployer n	and state the rdance with nakes any wa	d in this Owner's hat to the best of Section XI of the rranty, expressed
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Inspector (Factory Report d my know ASME C or implie employer from or Inspector	s and the <u>Mutual Sys</u> uring the p ledge and b code. By sig ed, concern shall be list connected br's Signatu	State or F <u>item</u> ) of <u>Non</u> period from pelief, this r ming this ce ing the repr able in any with this in <u>period</u>	alid commission Province of <u>Cal</u> <u>rwood, Massach</u> <u>7/19/9</u> epair or replace entificate, neithe air or replacem manner for any spection.	h issued by t <u>ifornia</u> , emp <u>nusetts</u> have i <u>coment</u> has be r the Inspect ent in this R personal inj <u>IBIO</u> State or Pro	the National ployed by <u>Au</u> inspected the <u>14/2/</u> cen performe or nor his en deport. Furth ury or proper	Board o rkwright compone 9/ d in acco nployer n hermore, rty damag	and state the and state the rdance with hakes any wa neither the ge or a loss o	d in this Owner's hat to the best of Section XI of the rranty, expressed Inspector nor his

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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•	OWNER'S REPORT OF REPAIR OR	REPLACEMENT
	As Required by the Provisions of ASME Code	e Section XI Sheet 1 of 1
•	Owner: Southern California Edison Company	ASME MO: 90052123
1.	Owner: Southern California Ediscu Contraction 2244 Walnut Grove Ave., Rosemead, CA 91770	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 12S, San Clemente, CA 92674-012S	RS: 218-90
3.	Work Performed by: Southern California Edison	P&ID: 5178270
4.	System Identification: Secondary Chemical Feed	•

NIS.2

- 5. (a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built N/A	Replaced, or Replaced, or Replacement Replaced	Stamped Yes/No No
's" Check Valve			.,	S1-SCF-359 RSO 1864-90	N/A N/A	Replacement	No
h Check Valve	Parker Eannifin	81672	N/A	Bt. 1BAN		· · · · · · · · · · · · · · · · · · ·	

7. Work Description:

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The check valve was replaced per FCN S5176M. The replacement valve was reconciled with the original construction code requirements.

Reference: FCN S5176M, CR-90-001

8. Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 915 psig Temp: N/A

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9.	Remarks:	None					
			(Applicable Man	ufacturer's Data R	eports to be attached)		
•			<u>CERTIFIC</u>	CATE OF C	OMPLIANCE		
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[							]
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D	ate <u>Apr</u>	il 2,	1991	<u> </u>			

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

# NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

As Required by the Provisions of ASME Code Section XI

		Sheet 1 of 1
1.	Owner: Southern California Edison Company	ASME MO: 90050985
	2244 Walnut Grove Ave., Rosemead, CA 91770	Unit: 1
2.	Plant: San Onoire Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	RS: 219-90
3.	Work Performed by: Southern California Edison	P&ID: 5178270
4.	System Identification: Secondary Chemical Feed	

5.

- (a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
" Check Valve	Kerotest	N/A	N/A	S1-SCF-398	N/A	Replaced	No
's" Check Valve.	Parker Eannifin	N/A	R/A	RSO 1864-90 Part# 8Z-C8L-1- SS	N/A	Replacement	No

7. Work Description:

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The check valve was replaced per FCN S5175M. The replacement was verified to be in compliance with the original construction code as reconciled by SCE Code Reconciliation Report CR-90-001. References: NCR 90050056, FCN S5175M, WR1-90-444

8. Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other []

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Pressure: 915 psig Temp: N/A

9.	Remarks:	None						
	<u></u>		(Applicable Mar	nufacturer's Dat	a Reports to be	attached)		
			<u>CERTIFI</u>	<u>CATE OF</u>	COMPLLA	ANCE		
We c	ertify that the st	atements n	nade in this re	port are corr	ect and this _ (	replacen (repair or re		conforms to the
	of the ASME C	ode, Secur		Supvg. AS	ME Codes E	、 <b>-</b>	4/2	19 <u> 9</u> 1
Signe		r or Owner	r's Designee)		Title		(Date)	
			CERTIF	FICATE O	F INSPEC	TION		
	ispectors and the	he State of	Province of Norwood Mas	<u>Caurornia</u> , c sachusetts hav	ve inspected the	he compone	nts described	Pressure Vessel ance Company in this Owner's at to the best of
R	eport during the	e period fro	m <u>7//8</u>	<u>190</u>	been perform	ned in accor	dance with S	at to the best of ection XI of the ranty, expressed
		• • • <b>•</b> • • • •	anain an mamini		S REDOTI CU	rineimoic.		nspector nor his any kind arising
fi	om or connecte	d with this	inspection.			•		
-	Inspector's Sign	nnlor ature	Commissi	ions <u>181</u> (State or	<u>2</u> Californ Province, Nat	nia ional Board	l)	
	Date	nil 2	. 19 <u>91</u>					
					<u> </u>			

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

			As Required by the Provisions of ASME C	Code Section XI			_
				Sheet 1	of 1	•	
1.	Owner:	Southern Califo	ornia Edison Company rove Ave., Rosemead, CA 91770	ASME	MO:	91030495	
				Unit:	1		
2.	Plant:	San Onofre Nu P.O. Box 128, S	clear Generating Station San Clemente, CA 92674-0128	RS:	066-91	L	
3.	Work P	erformed by:	Southern California Edison	P&ID:	517822	20 (B-11)	
4.	System	Identification:	Secondary Chemical Feed				
5.	(a)		estruction Code: Required: ANSI B 1775 Addenda, Code Cases: None	31.1; Actual:	ASME	Section III, Class 2,	
	(b)	Applicable Edi Addenda, Code	tion of Section XI Utilized for Repa Cases: None	irs or Replace	ments:	1977 Edition, S'78	
6.	Identifi	ication of Comp	onents Repaired or Replaced:				

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
'g" Tubing Valve	Imperial Eastman	NO42905	N/A	S1-SCF-413	N/A	Replaced	No
h" Tubing Valve	Imperial . Clevite, Inc.	42893	N/A	RSO 2855-86	N/A	Replacement	NO

7. Work Description:

The existing valve was replaced due to a broken valve stem. A valve constructed to ASME III, Class 2, was used in lieu of one constructed to the original construction code (ANSI B31.1). The valve was installed using compression fitting.

8. Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other []

### Pressure: 1280 psig Temp: N/A

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	(/	Applicable Mar	ufacturer's Data	Reports to b	e attached)		
		<u>CERTIFI</u>	CATE OF (	COMPLI	ANCE		
certify that the sta s of the ASME Co	atements mac ode, Section	de in this rep XI.	port are correc	t and this	replacer (repair or r	ment eplacement)	conforms to the
ned M	Maile	L	Supvg. ASM	E Codes I	Engineer	4/3	19 <u> </u> 91
(Owner	or Owner's	Designee)		Title	-	(Date)	
		•					
	- Ctata an D	alid commiss	<u>alifornia</u> , em achusetts have	the Nation ployed by inspected	al Board of <u>Arkwright</u> he compone	ents described	in this Owner's
Inspectors and the (Factory Mutual Sy Report during the my knowledge and ASME Code. By si or implied, concer employer shall be	e State or P <u>ystem</u> ) of <u>Nor</u> period from belief, this r igning this ce ning the repa liable in any	alid commiss Province of <u>G</u> <u>rwood, Massa</u> <u>3/6/9</u> epair or repla- rtificate, neit air or replace manner for a	ion issued by <u>California</u> , em <u>achusetts</u> have <u>i</u> to acement has be her the Inspec	the Nation ployed by inspected $\frac{3/21}{een performed for a performed by the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s$	al Board of <u>Arkwright</u> he compone <u>9</u> med in accor employer m arthermore,	and state the rdance with S akes any war neither the L	l in this Owner's at to the best of ection XI of the ranty, expressed nspector nor his
I, the undersigned Inspectors and the (Factory Mutual Sy Report during the my knowledge and ASME Code. By si or implied, concer employer shall be f from or connected Stuard (State) Inspector's Signat	e State or P <u>ystem</u> ) of <u>Non</u> period from belief, this r igning this ce ning the repa liable in any f with this in	alid commiss Province of <u>G</u> <u>rwood, Massi</u> <u>3/6/9</u> epair or replace rtificate, neit air or replace manner for a spection.	ion issued by <u>California</u> , em <u>achusetts</u> have <u>i</u> to acement has be her the Inspec	the Nation ployed by inspected 1 <u>3/21/</u> een perfort tor nor his Report. Fu jury or pro	al Board of <u>Arkwright</u> he compone <u>9</u> med in accor employer m arthermore, perty damag	ents described and state the rdance with S akes any war neither the In ge or a loss of	l in this Owner's at to the best of ection XI of the ranty, expressed nspector nor his

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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## NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

As Required by the Provisions of ASME Code Section XI

			Sheet :	1 of 1
1.		fornia Edison Company Grove Ave., Rosemead, CA 91770	ASME	CMO: 90010416
	· ·		Unit:	1
2.		uclear Generating Station San Clemente, CA 92674-0128	RS:	292-90
3.	Work Performed by:	Southern California Edison	P&ID:	5178125 (D-8)
4.	System Identification:	Containment Spray Hydrazine Addition		

5.

- (a) Applicable Construction Code: ASME Section III, Class 2, 1977 Edition, No Addenda, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
3/4" Relief Valve	Crosby Valve & I Gage	N62554-00-0001	N/A	S1-SEA-RV-2003B	1979	Replaced	Yes
3/4" Relief Valve	Crosby Valve & 1 Gage	N62554-00-0003	N/A	RSO 4110-85	1985	Replacement	Yes

7. Work Description:

The relief valve failed the bench test. Upon disassembly the disc and seat were found scratched and the relief valve was replaced. The replacement relief valve was verified to be in compliance with the original construction code requirements. The replacement was tested and installed. A VT-2 examination was conducted during a system pressure test with no relevant indication noted.

Reference: NCR 90070326

8. Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 325 psig Temp: N/A

กระดูกัน มีสุขที่ได้ และ ที่ที่ไม่หากคลังนี้ครั้งสังสูงสากกระวัติข้อการกระกู้ ๆ ๆ

## FORM NIS-2 (back)

Reports to be attached)
OMPLIANCE
and this <u>replacement</u> conforms to the (repair or replacement)
E Codes Engineer 6/11 1991 Title (Date)
Title (Date)
INSPECTION the National Board of Boiler and Pressure Vessel bloyed by <u>Arkwright Mutual Insurance Company</u> inspected the components described in this Owner's $\underline{C/IZ/91}$ and state that to the best of the performed in accordance with Section XI of the or nor his employer makes any warranty, expressed eport. Furthermore, neither the Inspector nor his arry or property damage or a loss of any kind arising <u>California</u> wince, National Board)

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

NIS-2	
OWNER'S REPORT OF REPAIR OR REPLACEM	ENT

		As Required by the Provisions of ASME Co	le Section XI			
		· · · · · · · · · · · · · · · · · · ·	Sheet	1 of 1		-
1.		lifornia Edison Company Grove Ave., Rosemead, CA 91770	ASME	MO:	89122214000 89122214001	
			Unit:	1		
2.	Plant: San Onofre 1	Nuclear Generating Station				
	P.O. Box 128	, San Clemente, CA 92674-0128	RS:	324-90		
3.	Work Performed by:	Southern California Edison	P&ID:	517811	5 (G-11)	
	-	•				
4.	System Identification	: Safety Injection				

- (a) Applicable Construction Code: Westinghouse Equipment Specification 675268, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
6" Check Valve	Rockwell- Edwards		N/A	S1-SIS-003		Repaired	No

#### 7. Work Description:

5.

The valve was disassembled to permit hand stroking of the disc. During removal machining of the bonnet/body canopy seal, base material was inadvertently removed (NCR 90080223). Additionally, some dimensional discrepancies between the valve and the manufacturer's drawing were identified (NCR's 90100093 & 90100098). Weld build-up was performed on the damaged areas of the bonnet and body to restore the areas to the dimensional requirements of the manufacture's drawing. PT examinations were performed both before welding and again on the final machined surface of the repair areas. The repair welding is documented on WR1-90-679 & 680.

## Tests Conducted: System Leakage [X] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [X] VT-2 Examination Pressure: 2080 psig Temp: 545 °F

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## FORM NIS-2 (back)

).	lemarks: None	
	(Applicable Manufacturer's Data Reports to be attached)	
	CERTIFICATE OF COMPLIANCE	
We cen rules o Signed	y that the statements made in this report are correct and this <u>repair</u> conforms to the he ASME Code, Section XI. (repair or replacement) <u>Cover or Owner's Designee</u> <u>Supvg. ASME Codes Engineer</u> <u>Codes Apr.</u> <u>199</u> (Owner or Owner's Designee) Title (Date)	
[	CERTIFICATE OF INSPECTION	
Ins (Fa Re my AS or em fro	undersigned holding a valid commission issued by the National Board of Boiler and Pressure ctors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Co- ory Mutual System</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this C rt during the period from $9/25/90$ to $4/28/91$ and state that to the nowledge and belief, this repair or replacement has been performed in accordance with Section XI E Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, exp inplied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector over shall be liable in any manner for any personal injury or property damage or a loss of any kind or connected with this inspection. Million Commissions <u>1862</u> California ector's Signature (State or Province, National Board)	wner's best of l of the pressed nor his
Da	<u>april 28, 1991</u>	

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

N-5 ≠N/A

#### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

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1.	Owner:	Southern California Edison Company	ASME M	10: 89071268	
	·	2244 Walnut Grove Ave., Rosemead, CA 91770	Unit:	1	
2.	Plant:	San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92672	RS:	087-90	
3.	Work Pe	rformed by: Southern California Edison	P&ID:	5178115	ì
4.	System	Identification: SAFETY INJECTION	- 11 - 14 - 1		

5.- (a) Applicable Construction Code: ANSI B31.1-1955 (CODE CLASSIFIED XI-2) Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

- Repaired. ASME Code National Other Replaced, or Year Stamped Name of Name of Manufacturer Identification Component Manufacturer Serial No. Board No Built Replacement Yes/No 15" GATE VALVE . -S1-SIS-302 N/A CRANE DWG. NO. N/A NO C-58457-6 1"x 55" BOLTS (16) TRACE: S1 N/A RSO 2572-89 1989 REPLACEMENT ALLIED NUT & NO BOLT 1"-8 HEAVY HEX NUT ALLIED NUT & TRACE: V29 N/A RSO 2572-89 1989 REPLACEMENT NO BOLT
- 5. Identification of Components Repaired or Replaced:

7. Work Description:

Bolting on valve S1-SIS-302 was replaced with bolting verified as meeting the original construction code (Ref. Material Evaluation ME-90-006). Prior to replacement a VT-1 examination was performed on the bolts and nuts. After replacement, a VT-2 examination was performed in conjunction with a system functional pressure test.

8. Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 14 psig Temp: N/A °F

Remarks: ASME III, CL.2, BOLTING USED IN LIEU OF ASTM (ANSI B31.1) 9. (Applicable Manufacturer's Data Reports to be attached) CERTIFICATE OF COMPLIANCE We certify that the statements made in this report are correct and this \_\_\_\_\_ conforms to the rules of the ASME Code, Section XI. REPLACEMENT (repair or replacement) (Dwner or Owner's Designee) Title (Date) Signed\_ ا المحدد والمستعمل 2 المتصر عالم CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual <u>System</u>) of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from  $\frac{4/5}{90}$  to  $\frac{5}{14}$ and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. California 1574 Commissions Jaclos (State or Province, National Board) Inspector's Signature .30 19 90 Date Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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		<u>OWNER'S</u> <u>As Required by</u>	NIS-2 S REPORT OF REPAIR OR REPLACE ( the Provisions of ASME Code	MENT Sectio	<u>n XI</u>
1.	Owner:	Southern Califor	rnia Edison Company	Travel	er: ASME MO
		2244 Walnut Grov	ve Ave., Rosemead, CA 91770	Unit:	1
2.	Plant:	San Onofre Nucle P.O. Box 128, Sa	ear Generating Station an Clemente, CA 92672	MERS:	374-89
3.	Work Pe	erformed by: Sout	thern California Edison	H.O.:	89070594
4.	System	Identification:	Safety Injection System (SIS)	P&ID:	5178115 (G-5)

- (a) Applicable Construction Code: ASA B31.1, 1955 Edition 5.
  - Code Cases: N/A Code Classified: ASME XI-2 Applicable Edition of Section XI Utilized for Repairs or Replacements: (b) 1977 Edition, S'78 Addenda, Code Cases: N/A
- Identification of Components Repaired or Replaced: 6.

Name of Component	Name of Hanufacturer	Manufacturer Serial No.	National Beard No.	Other Identification	Year	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Isolation Valve	Crane	N/A	8/A	\$1-\$I\$-312 (1/2")	57A	•••••	No
1/2" Fipe, 3" Lg. Sch. 40 A-312 to 304		N/A	8/A	Upstream of Valve	S/A	Replaced	Ko
1/2" Pipe, 3" Lg. Sch. 40 A-312 tp 304	Sandvik Steel Company	N/A	N/A	RSO-1251-87 Ht. No. 453483 Ht. Code - FBS	K/A	Replacement	No

7. Work Description:

. . . . . .

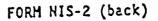
. . . .

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1/2" pipe section upstream of valve SIS-312 has numerous NDE-Pt indications. Replace pipe section with in-kind pipe: 1/2", Schedule 40, ASTM A-312 type 304 pipe.

REFERENCE: NCR S01-P-7304, WR1-89-502, ME-89-038

Tests Conducted: System Leakage [ ] System Functional [x] System Inservice [ Hydrostatic [ ] Pneumatic [ ] Other [ ] Pressure: 160 psig Temp: Amb °F 8.



9. Remarks: Documentation for the replacement item is available on site.

## (Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>Replacement</u> conforms to the rules of the ASME Code, Section XI. (repair or replacement) Signed <u>Ile Majclub</u> (Supvg. ASME Codes Engineer) <u>2/2</u> 19 <u>89</u> (Owner or Owner's Designee) Title (Date)
CERTIFICATE OF INSPECTION
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company (Factory Mutual</u> <u>System)</u> of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from $\frac{7}{7}$ , $\frac{7}{5}$ to $\frac{5}{5}$ , $\frac{5}{5}$ and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.
<u>OJ</u> Commissions / <u>272California</u> Inspector's Signature (State or Province, National Board)
Date <u>8/9</u> 19 <u>89</u>

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

		· · · · ·		
		NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACE</u> As Required by the Provisions of ASME Code	MENT Sectio	<u>n XI</u>
1.	Owner:	Southern California Edison Company	Travel	er: ASME MO
•		2244 Walnut Grove Ave., Rosemead, CA 91770	Unit:	1
2.	Plant:	San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92672	MERS:	361-89
3.	Work Pe	rformed by: Southern California Edison	M.O.:	89062907
4.	System	Identification: Safety Injection System (SIS)	P&ID:	5178115-10 (G-4)
5.	(a) Ap	plicable Construction Code: ASA B31.1, 1955 E	dition	

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- Code Cases: N/A Code Classified: ASME XI-2 (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: N/A
- Repaired, ASME Code National Replaced, or Name of Name of Manufacturer Other Year Stamped **Identification** Manufacturer Built Replacement Yes/No Component Serial No. Board No N/A S1-SIS-313 Test Connector Valve Crane N/A N/A No (1/2")1/2" pipe, 3" Lg. Sch. 10 A-312 tp 304 N/A N/A Upstream of Vlv N/A Replaced No 1/2" pipe, 3" Lg. Sandvik Inc. N/A N/A RSO-1251-87 N/A Replacement No Sch. 40 A-312 tp 304 Ht. No. 463488 Ht. Code FBS
- 6. Identification of Components Repaired or Replaced:

7. Work Description:

1/2" pipe section upstream of valve SIS-313 is leaking. Replace this 3" (approximately) long section with Schedule 40 pipe (ASTM A-312 type 304).

REFERENCE: NCR S01-P-7297, ME-89-038

8. Tests Conducted: System Leakage [] System Functional [x] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 160 psig Temp: Amb <sup>o</sup>F

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FORM NIS-2 (back) **9.** Remarks: Documentation for the replacement item is available on site. (Applicable Manufacturer's Data Reports to be attached) • • • CERTIFICATE OF COMPLIANCE We certify that the statements made in this report are correct and this Replacement \_\_\_\_\_ conforms to the rules of the ASME Code, Section XI. (repair or replacement) Signed <u>Marille (Supva. ASME Codes Engineer)</u> <u>B/10</u> 19<u>89</u> (Owner or Owner's Designee) Title (Date) CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual <u>System</u>) of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from  $\frac{7/8/89}{11/89}$  to  $\frac{3/11/89}{11}$  and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. Commissions 1272 California Inspector's Signature (State or Province, National Board) 8/14 1959 Date

Note:

Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

#### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

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1.	Owner: Southern California Edison Company	Traveler: ASME MO
	2244 Walnut Grove Ave., Rosemead, CA 917	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92672	MERS: 300-89
3.	Work Performed by: Southern California Edison	M.O.: 89060285
4.	System Identification: Safety Injection	P&ID: 5178115
5.	(a) Applicable Construction Code: ASA B31.1 - 19	55 (XI-2)

- Code Cases: N/A (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: N/A
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
3/4" Y-Type Globe Valve	Rockwell	N/A	N/A	S1-SIS-366	 Repaired	No

- 7. Work Description: Ground out the existing weld per the instruction contained in WR1-89-392. Performed pre-reweld NDE (PT). Performed reweld of upstream weld at S1-SIS-366 per WR1-89-392. Performed post-reweld NDE (PT). <u>Note</u>: 1. Hydrostatic test not required per IWA-4400 (b)(3). 2. Exception taken to performance of system functional test as it would require a special test with an abnormal lineup
- 8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other [x] None; Hydrostatic test not required per IWA-4400 (b)(3); Exception taken to performance of system functional test as it would require a special test with an abnormal lineup. Pressure: psig Temp: OF

FORM NIS-2 (back)

Remarks: none 9

(Applicable Manufacturer's Data Reports to be attached) CERTIFICATE OF COMPLIANCE We certify that the statements made in this report are correct and this \_\_\_\_\_ conforms to the rules of the ASME Code, Section XI. Repair (repair or replacement) (Owner or Owner's Designee) Title (Date) Sianed CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California, employed by Arkwright Mutual Insurance Company (Factory Mutual <u>System</u>) of <u>Norwood</u>, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from 6-1-89 to  $6\cdot23-89$ and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \_\_ Commissions <u>California 1574</u> (State or Province, National Board) Andlan Inspector's Signature 19 89 Date June 23 Supplemental sheets in the form of lists, sketches, or drawings may Note: be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

ASME Section XI Abstract Owner's Summary of Repair or Replacement

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1. Owner:		alifornia Edisor t Grove Ave. CA 91770	n Company	Trave Unit:	ler: S01-90-008
2. Plant:	San Onofre	Nuclear Generat	ting Station		
	P. O. Box	128, San Clement	te, CA 92672	DCP:	1-3526.00SN
3. Work Perfor	rmed by:	Bechtel Const P. O. Box 450 San Clemente,		CWO:	90030632000 90030640000 90061772000
4. System Iden	ntification:	Safety Inject	ion System (SIS)	P&	ID: 5170826
5. Plant Tag I	No.: N/A		Serial No.: N	/A	
6. Component:	See NIS-2		Name: See Nis-2		Size: See NIS-
7. Code: ASA	B16.5, 1957	Ed. C	lass: XI-2		
8. Purpose (S	tatement of	Problem):			
DCP 1-3526 & valve S1	.00SN modif: -SIS-411.	ies line #S1-SIS	-6004-1"-CL. Adds Y	-strainer	• S1-SIS-YS-981
Associated	DWG's: 4520 FIDCN's M-2	574 7436, M-7444, M-	7447.		
9. Narrative	Summary (Br	ief Description	of Work Performed):		
1. The app	ropriate do	cuments for the	new item were revie	wed to ve	erify compliance
with th 2. Valves, WR5/5A SMD. SM	e applicable piping & As weld records E(C-1), SMF	e Construction c ssociated hardwa s for welds C, D , SMG,SMH, SMJ,	ode. re were installed I , ST, SU, SV, SW, S SMK.	AW per DO X, SY, SZ	CP 1-3526 & IAW
3. Initial	System Fun	CLIONAL LEST WIT	h VT-2 was performe	<b>u.</b>	
10. Material	Used:				
See NIS-2					
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Prepared by: <u>Les Taylor</u> 

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Date <u>03/06/91</u>

#### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

1. Owner:		California Edison Company ut Grove Ave.	Trave	ler: S01-90-008	
		CA 91770	Unit:	1	
2. Plant:	San Onofro P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	DCP:	1-3526.00SN	
3. Work Perfor	med by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90030632000 90030640000 90061772000	
4. System Ider	tification	: Safety Injection System (SIS)	P&ID:	5170826	
		A LAN ON ANY ACA DIG 5 1057 Ed	for value	e Codo Classe VI	2

- 5. (a) Applicable Construction Code: ASA B16.5, 1957 Ed. for valves Code Class: XI-2 ASA B31.1, 1955 Ed. for piping Code Class: XI-2
   (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition thru S'78 Addenda, Code Cases: N/A
- 6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	  Manufacturer  Serial No.	National Board No.	Other Identification	  Year  Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
1# 90* elbow	Camco Fittings Co.	Ht #34	N/A	Item 10   RSO #0951-90	N/A	Replacement	   NO
1º 45º elbow	Camco Fittings Co.	HT #91	N/A	1tem 11   RSO #0951-90	N/A	Replacement	NO
1# Y-strainer	  Penncast Corp.	HT #28548	N/A	Item 12 SIS-YS-981   RSO #1156-90	1990	Replacement	
1" tee SW	Camco  Fittings Co.	HT #93	N/A	Item 14   RSO #0951-90	N/A	Replacement	I NO
1# coupling SW	Camco Fittings Co.	HT #EBH	N/A	Item 15   RSO #0951-90	N/A	Replacement	NO
1" pipe Sch. 160	Combustion Engineering	HT #K31592	N/A	Item 8   RSO #0951-90	N/A	Replacement	NO

7. Work Description:

DCP 1-3526.00SN Modifies line S1-SIS-YS-6004-1"-CL. Adds Y-strainer S1-SIS-YS-981 & valve S1-SIS-411. Fabricates welds C, D, ST, SU, SV, SW, SX, SY, SZ, SMA, SMB, SMC, SMD, SME(C-1), SMF, SMG, SMH, SMJ & SMK. Perform system functional test.

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8. Tests Conducted: System Leakage [ ] System Functiona] [/] System Inservice [ ] Hydrostatic [] Pneumatic [] Other [] Pressure: 1330 psig Temp: 73.4°F (Weld "ST") Temp: 73.1°F (Remaining Welds) Pressure: 1220 psig



#### Remarks: 9

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

(Owner or Owner's Designee) Title

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## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this replacement \_\_\_\_\_ conforms to the rules of the ASME Code, Section XI (Repair or Replacement) <u>3.7</u>, 19<u>91</u> (Date) Signed 72 Bel Cotto ENG \_

## CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by \*Arkwright Mutual Insurance Company of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from 6/8/90 to 3/7/91 and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or \*Factory Mutual System connected with this inspection.

<u>emplon</u> Commissions <u>1862</u> (State or Province, National Board Inspector s Signature • • 7 . 1991

化试验 化二乙酸乙酸钙 原外的 Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

Supplemental Sheet for NIS-2 Form Page 3 of 3

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1. Owner:		California Edison Company ut Grove Ave.	Traveler: S01-90-008		
	·	CA 91770	Unit:	1	
2. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	DCP:	1-3526.00SN	
3. Work Perf	formed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90030632000 90030640000 90061772000	
4. System Ic	lentification	: Safety Injection System (SIS)	P&ID:	5170826	

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Name Component	Name of Manufacturer	  Manufacturer  Serial No.	  National  Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	
1" gate valve	Anchor  Darling	SN #E3265-18-3	N/A	Item 15 SIS-411   RSO #0543-90	1990	  Replacement	YES

## ASME Section XI Abstract Owner's Summary of Repair or Replacement

wner:	2244 Walnu	alifornia Edison t Grove Ave.		Trave	ler: S01-90-009
lant.	San Onofre	Nuclear Generat	ing Station	UNIC	1
	P. 0. Box	128, San Clement	e, CA 92672	DCP:	1-3526.00SN
lork Perfor	med hv:	Bechtel Constr	uction Co.	CWO:	90030634000
		P. O. Box 450			90030640000
		San Clemente,	CA 92672		90060815000
System Iden <sup>.</sup>	tification:	Safety Injectio	n System (SIS)	P&ID:	5170826
Plant Tag No	o.: N/A		Serial No.: N	/A	
Component:	See NIS-2		Name: See NIS-2	Size: S	ee NIS-2
Code: ASA B	16.5, 1957	Ed. for valves	Class: XI-3		
Purpose (St	atement of	Problem):			
DCP 1-3526. valve S1-SI	00SN modifi S-412.	es line #S1-SIS-	6005-1"-CL, adds \	/-strainer	S1-SIS-YS-982 &
			7.		
Narrative S	ummary (Bri	ef Description o	f Work Performed)	:	
		uments were revi	ewed to verify con	npliance w	ith the applicable
2. Valves. p	piping & as	sociated hardware	were installed IA	W DCP1-352	26.00SN & IAW WR5/5
weld rec	ords for w	elds A, B, SA, SE	B, SC, SD, SE, SF,	SG, SH, S	SJ, SK, SL, SM, SN
SP, SQ, 3. An Initi	SR, SS. al System f	Functional Test w	ith VT-2 was perfo	ormed.	
M-+	4				
Material U	sea:				
		d			
Material U		ed			
	System Iden Plant Tag N Component: Code: ASA B Purpose (St DCP 1-3526. Valve S1-SI Associated Narrative S 1. The appr construc 2. Valves, p weld rec SP, SQ,	2244 Walnu Rosemead, Plant: San Onofre P. O. Box Nork Performed by: System Identification: Plant Tag No.: N/A Component: See NIS-2 Code: ASA B16.5, 1957 Purpose (Statement of DCP 1-3526.00SN modifi valve S1-SIS-412. Associated DWG's: 4526 FIDCN's M-7 Narrative Summary (Bri 1. The appropriate doc construction code. 2. Valves, piping & ass weld records for we SP, SQ, SR, SS.	Wmer: Southern California Edison 2244 Walnut Grove Ave. Rosemead, CA 91770 Plant: San Onofre Nuclear Generat P. O. Box 128, San Clement Nork Performed by: Bechtel Constr P. O. Box 450 San Clemente, System Identification: Safety Injectio Plant Tag No.: N/A Component: See NIS-2 Code: ASA B16.5, 1957 Ed. for valves Purpose (Statement of Problem): DCP 1-3526.00SN modifies line #S1-SIS- valve S1-SIS-412. Associated DWG's: 452674 FIDCN's M-7436,M-7444,M-744 Narrative Summary (Brief Description of 1. The appropriate documents were revi construction code. 2. Valves, piping & associated hardware weld records for welds A, B, SA, SI SP, SQ, SR, SS.	Numer:Southern California Edison Company 2244 Walnut Grove Ave. Rosemead, CA 91770Plant:San Onofre Nuclear Generating Station P. O. Box 128, San Clemente, CA 92672Plant:San Onofre Nuclear Generating Station P. O. Box 128, San Clemente, CA 92672Nork Performed by:Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672System Identification:Safety Injection System (SIS)Plant Tag No.:N/ASerial No.:N/AComponent:See NIS-2Code:ASA B16.5, 1957 Ed. for valvesClass:XI-3Purpose(Statement of Problem):OCP 1-3526.00SN modifies line #S1-SIS-6005-1"-CL, adds Valve S1-SIS-412.Associated DWG's:452674 FIDCN's M-7436,M-7444,M-7447.Narrative Summary (Brief Description of Work Performed)1. The appropriate documents were reviewed to verify cor construction code.2. Valves, piping & associated hardware were installed IA weld records for welds A, B, SA, SB, SC, SD, SE, SF, SP, SQ, SR, SS.	Willer:       Southern carries are an expensively 2244 Walnut Grove Ave. Rosemead, CA 91770       Unit:         Plant:       San Onofre Nuclear Generating Station P. O. Box 128, San Clemente, CA 92672       DCP:         Nork Performed by:       Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672       CWO: P. O. Box 450 San Clemente, CA 92672         System Identification:       Safety Injection System (SIS)       P&ID:         Plant Tag No.:       N/A       Serial No.:       N/A         Component:       See NIS-2       Name: See NIS-2       Size: Si         Code:       ASA B16.5, 1957 Ed. for valves       Class: XI-3         Purpose (Statement of Problem):       COCP 1-3526.00SN modifies line #S1-SIS-6005-1"-CL, adds Y-strainer valve S1-SIS-412.         Associated DWG's:       452674 FIDCN's M-7436,M-7444,M-7447.         Narrative Summary (Brief Description of Work Performed):         1. The appropriate documents were reviewed to verify compliance w construction code.         2. Valves, piping & associated hardware were installed IAW DCP1-352 weld records for welds A, B, SA, SB, SC, SD, SE, SF, SG, SH, SC

Prepared by: <u>Les Taylor</u>

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Date \_\_\_\_\_03/06/91

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#### **NIS-2** <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> <u>As Required by the Provisions of ASME Code Section XI</u>

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1. Owner:	2244 Waln	California Edison Company ut Grove Ave.	Trave	ler: S01-90-009
	Rosemead,	CA 91770	Unit:	1
2. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	DCP:	1-3526.00SN
3. Work Perfo	rmed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90030634000 90030640000 90060815000
4. System Ide	ntification	: Safety Injection System (SIS)	P&ID:	5170826

 5. (a) Applicable Construction Code: ASA B16.5, 1957 Ed. for valves Code Class:XI-2 ASA B31.1, 1955 Ed. for piping & fittings Code Class: XI-2
 (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition thru S'78 Addenda, Code Cases:N/A

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	i  Manufacturer  Serial No.	  National  Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
1" pipe sch.160	Combustion   Engineering	Ht. #K31592	N/A	Item 8   RSO #0951-90	N/A	  Replacement	NO
1 <b>" 90"</b> Ell	Camco Fittings Co.	Ht. #34	N/A	Item 10 RSO #0951-90	N/A	  Replacement	Ю
1" 45° Ell	Camco Fittings Co.	Ht.#91	N/A	Item 11   RSO #0951-90	N/A	Replacement	NO
1# Y Strainer	Penncast Co.	Ht. #30259	.   N/A ·	Item 12 SIS-YS-982   RSO #1156-90	1990	Replacement	NO
1ª gate valve	Anchor Darling	S/N E3265-18-4	N/A	Item 13 SIS-412   RSO #0543-90	1990	  Replacement	YES
1" tee SW	Camco Fittings Co.	   Ht. #93	N/A	Item 14 RSO #0951-90	N/A	  Replacement	NO

#### 7. Work Description:

DCP 1-3526.00SN Modifies line S1-SIS-6005-1"-CL. Adds Y-strainer S1-SIS-YS-982 & valve S1-SIS-412. Fabricate welds A, B, SA, SB, SC, SD, SE, SF, SG, SH, SJ, SK, SL, SM, SN, SP, SQ, SR & SS. Perform system functional test.

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8. Tests Conducted: System Leakage [] System Functional [/] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 1365 psig Temp: 73.2° (Weld "SA" only) Pressure: 1220 psig Temp: 73.1° (Remaining Welds) Supplemental Sheet for NIS-2 Form Page 3 of 3

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1. Owner:	2244 Waln	California Edison Company ut Grove Ave.	Trave	ler: S01-90-009
	Rosemead,	CA 91770	Unit:	1
2. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	DCP:	1-3526.00SN
3. Work Perf	ormed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90030634000 90030640000 90060815000
4. System Ic	lentification	: Safety Injection System (SIS)	P&ID:	5170826

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Name Component	Name of Manufacturer	  Manufacturer  Serial No.	National Board No.	Other Identification	Year  Built	Repaired  Replaced,or  Replacement	• •
1" coupling	Camco  Fittings Co.	Ht. #EBH	N/A	Item 15   RSO #0951-90	N/A	  Replacement	NO

## ASME Section XI Abstract Owner's Summary of Repair or Replacement

1.	Owner:		lifornia Edis Grove Ave.		Trave	ler: S01-90-015
		,			Unit:	1
2.	Plant:	San Onofre P. O. Box 1	Nuclear Gener 28, San Cleme	ating Station nte, CA 92672	MMP:	1-3526.00SN
3.	Work Perfo	med by:	Bechtel Cons P. O. Box 45 San Clemente	0	CWO:	90061739000 90061772000
4.	System Ider	tification:	Safety Inject	ion System (SIS)	P&ID:	5170826
5.	Plant Tag I	lo.: S1-SIS-S	V-2900	Serial No.:	6	
6.	Component:	Solenoid val	ve	Name: Target Roo	ck Size: 3	/4" <i>\</i>
7.	Code: ASA	816.5, 1957 E	d.	Class: XI-2		
8.	Purpose (S	atement of P	roblem):			
	MMP 1-3526 fabricates	00SN Removes seal weld `A	bonnet seal ` in accordan	weld & installs an ce with MMP 1-3526	O-ring in .00SN & WR-	its place and 5A
	Associted I	WG's: 452674 FIDCN M-7	499			
9.	Narrative	Summary (Brie	f Description	of Work Performed	):	
	1. Valve bo was per		ld was remove	d, O-ring installed	1 & valve b	onnet tack weld `A`
			<b>.</b>	ith VT-2 was perfo		

10. Material Used:

See NIS-2

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Prepared by:

Taylor

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Date <u>03/06/91</u>

#### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

. Owner:	2244 Waln	California Edison Company ut Grove Ave.	Trave	ler: S01-90-015
	Rosemead,	CA 91770	Unit:	1
. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	MMP:	1-3526.00SN
3. Work Per	formed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90061739000 90061772000
. System I	dentification	: Safety Injection System (SIS)	P&ID:	5170826
5. (a) <b>Ap</b>	plicable Cons	truction Code: ASA B16.5, 1957 Ed.	Code Cla	ssified XI-2
		the of contine VI Utilized for Pana		

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

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Name Component	Name of Manufacturer	Manufacturer Serial No.	  National  Board No.	Other Identification	Year Built	1	ASME Code Stamped Yes/No
Solenoid Valve	  Target Rock	6	N/A	   \$1-\$I\$-\$V-2900	1988	  Repaired	YES

7. Work Description:

MMP 1-3526.00SN Remove bonnet seal weld & install O-ring with tack weld 'A'.

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8. Tests Conducted: System Leakage [] System Functional [/] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: >1220 psig Temp: 73.1°F

FORM NIS-2 (back)

#### 9. Remarks:

## Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this repair conforms to the rules of the ASME Code, Section XI (Repair or Replacement)

Signed <u>CE Elimina 1 - El COUSENG.</u> <u>3-8</u>, 19<u>91</u> (Owner or Owner's Designee) Title (Date)

## CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>. <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>6/27/90</u> to <u>3/g/9/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

<u>Chilampson</u> Inspector's Signature	Commissions	<u>1862 CA</u> (State or Province,	National	Board
Date_ <u>March</u>	<u>8</u> , 19 <u>7/</u>	a a na a a a a a a a a a a a a a a a a		

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

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## ASME Section XI Abstract Owner's Summary of Repair or Replacement

===	-				rave Trave	er: S01-90-016
1.	Owner:	Southern Californi 2244 Walnut Grove	Ave.	mpany	IIave	ler. 301-30-010
		Rosemead, CA 9177			Unit:	1
2.	Plant:	San Onofre Nuclear P. O. Box 128, Sar	r Generating n Clemente,	Station CA 92672	MMP:	1-3526.00SN
3.	Work Perfor	P. 0.	el Construct Box 450 lemente, CA		CWO:	90061768000 90060815000
4.	System Iden	tification: Safety	Injection S	ystem (SIS)	P&ID:	5170826
5.	Plant Tag N	o.: S1-SIS-SV-3900		Serial No.: 5		
6.	Component:	Solenoid valve	Na	me: Target Rock	Size: 3,	/4"φ
7.	Code: ASA B	16.5, 1957 Ed.	Clas	s: XI-2		
8.	Purpose (St	atement of Problem	):			
	MMP 1-3526. fabricates	00SN Removes bonnet seal weld `B` IAW N	t seal weld MMP 1-3526.0	& installs an O- OSN & WR-5A	ring in	its place and <sup>•</sup>
	Associted D	WG's: 452674 FIDCN M-7499				
	· . • .					
9.	Narrative S	ummary (Brief Desc	ription of W	ork Performed):	,	
	1. Valve bo was perf		removed, O-	ring installed &	valve b	onnet tack weld `B`

2. Initial system functional test with VT-2 was performed.

10. Material Used:

See NIS-2

Prepared by: Les Taylor

Date \_\_\_\_03/06/91

#### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

,		**********	*======================================		
	1. Owner:	Southern	California Edison Company ut Grove Ave.	Trave	ler: S01-90-016
	· · ·		CA 91770	Unit:	1
	2. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	MMP:	1-3526.00SN
	3. Work Perfor	rmed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90061768000 90060815000
	4. System Ider	ntificatior	: Safety Injection System (SIS)	P&ID:	5170826
	5. (a) Appli	icable Cons	truction Code: ASA B16.5, 1957 Ed	. Code Cla	ssified XI-2

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	  Name of  Manufacturer	  Manufacturer  Serial No.	National Board No.	Other Identification	  Year  Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
Solenoid Valve	Target Rock	5	N/A	\$1-\$I\$-\$V-3900	1988	  Repaired	YES

7. Work Description:

MMP 1-3526.00SN Remove bonnet seal weld & install O-ring with tack weld 'B'.

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8. Tests Conducted: System Leakage [] System Functional [/] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: >1220 psig Temp: 73.1°F

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#### 9. Remarks:

## Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

#### CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this repair conforms to the rules of the ASME Code, Section XI (Repair or Replacement) Signed  $\underline{TC}$   $\underline{Dm}$   $\underline{L}$   $\underline{Bcc}$   $\underline{CuDzS}$   $\underline{Exc}$   $\underline{3.7}$ ,  $19\underline{71}$  (Owner or Owner's Designee) Title (Date)

#### CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood</u>. <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>6/27/90</u> to <u>3/7/9/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

Al ampson	Commissions	1862 CA		
<u>Inspector's Signature</u>	e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de l La companya de la companya de la companya de la companya de la companya de la companya de la companya de la comp			
Date March 7.	, 19 <u>_/</u>		an ang Karanan ang karanan ang karanan na	

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

## ASME Section XI Abstract Owner's Summary of Repair or Replacement

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							************
1.	Owner:		lifornia Edison C Grove Ave.			Traveler:	S01-90-024
		•				Unit:	1
2.	Plant:	San Onofre P. O. Box 1	Nuclear Generatin 28, San Clemente,	g Station CA 92672		MMP:	1-3601.00SM
3.	Work Perfor	med by:	Bechtel Construc P. O. Box 450 San Clemente, CA			CWO:	90080635000 90080845000
4.	System Iden	tification:	Turbine Plant C	ooling Wate	er (TCW)	<b>P&amp;ID:</b> 517	8320
5.	Plant Tag N	o.: See NIS	-2	Serial No	.: See	NIS-2	
6.	Component:	See NIS-2	N	am <mark>e:</mark> See N	IIS-2 S	ize: See N	IS-2
7.	Code: ASA B	16.5, 1957 E	d. for valves ANS	I B31.1, 19	80 Ed. f	or piping.	Class: XI-2
8.	Purpose (St	atement of P	roblem):				
	MMP 1-3601.	00SM reroute	s portion of line	S1-TCW-892	-4"-HM		
		DWG's 714492 , M7548, M75					
9.	Narrative S	ummary (Brie	f Description of	Work Perfor	med):		
		ropriate docu tion code.	uments were review	ved to veri	fy compli	ance with	the applicable
	2. Valves, 1-3601.0	piping & a	ssociated hardwa ccordance with th and G.	re were in e WR5/5A we	nstalled eld recor	in accorda ds SA, SB,	ance with MMP SC, SD, SE, A,

12/26/90

Date

NIS-2

B, C, D, E, F(C-1), and G. 3. A system hydrostatic test with VT-2 was performed.

Les Tavlor

10. Material Used:

Prepared by:

See NIS-2

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#### NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT As Required by the Provisions of ASME Code Section XI

. Owner:	2244 Waln	California Edison Company ut Grove Ave.	Traveler:	S01-90-024
	Rosemead,	CA 91770	Unit:	1
. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	MMP:	1-3601.00SM
. Work Perf	ormed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90080635000 90080845000

- 5. (a) Applicable Construction Code: ASA B16.5, 1957 Ed. for valves Code Class: XI-2 ANSI B31.1, 1980 Ed. for piping Code Class: XI-2
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A
- 6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
3/4" Dia. Studs	Copperweid Steel Co.	HT # 94434	N/A	1tem 442   RSO # 2835-89	N/A	Replacement	No
3/4º Dia. Nuts	Texas Bolt Co.	HT # 36654	N/A	Item #442   RSO #2835-89	N/A	Replacement	NO
4" X 1" Threadolet	WFI Nuclear Products, Inc.	HT # 271SNR	N/A ·	liem #911 RSO #2894-90	N/A	Replacement	No
4" Flange	Ladish Co.	HT # ND2K	N/A	Item 221 RSO #2586-90	N/A	Replacement	No
4" Elbow 90 °	Ladish Co.	HT # FH6X	N/A	ltem 224   RSO #2586-90	N/A	Replacement	No
4" Pipe Sch STd/40	USS Tubular Prod.	HT # L01977	N/A	Item 14   RSO # 2586-90	N/A	Replacment	No

- 7. Work Description:
- MMP 1-3601.00SM, Reroute line S1-TCW-892-4"-HM Fabricate welds SA, SB, SC, SD, SE, A, B, C, D, E, F(C-1), and G. Perform system hydrostatic test.
- 8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] Pneumatic [] Other [] Pressure: 140 psig Temp: AMB

FORM NIS-2 (back)

#### 9. Remarks:

## Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

#### CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI (Repair or Replacement) Signed And Const. Mar. Dec. 27, 1990 (Owner or Owner's Designee) Title (Date)

#### CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood, Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>16/4/90</u> to 1/7/9/ and state that to the best of my knowledge and belief, this repair or réplacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

. . . . . . . . <u>Andrepane</u> Commissions <u>1862</u> CA Inspector's Signature (State or Province, National Board <u>un ary 7, 1997</u>

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

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Supplemental Sheet for NIS-2 Form Page 3 of 3

1. Owner:		Southern ( 2244 Walnu	California Edison Company ut Grove Ave.	Traveler: S01-90-024		
		Rosemead,	CA 91770	Unit:	1	
2.	Plant:	San Onofre P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	DCP:	1-3601.00SM	
3.	Work Perfor	med by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90080635000 90080845000	

1.

4. System Identification: Turbine Plant Cooling Water (TCW) P&ID: 5178320

Name Component	Name of Manufacturer	  Manufacturer  Serial No.	National Board No.	Other Identification	  Year  Built	Repaired  Replaced,or  Replacement	ASME Code  Stamped  Yes/No
4" X 1/2" Threadolet	WFI Nuclear Products, Inc.	HT #   265snr	N/A	Item 910   RSO #2613-90	N/A	  Replacement	No
5-3 X 3/4" Sockolet	WFI Nuclear   Products, Inc.	HT # 282RNB	N/A	Item 72   RSO #2613-90	N/A	Replacement	No
3/4" Pipe Sch Std/40	Quanex   Corp.	HT # 282922	N/A	Item 213/216   RSO #2586-90	N/A	Replacement	No
3/4" Elbow 90° SW	Capitol   Mfg. Co.	HT #   R6S	N/A	Item 204   RSO #2586-90	N/A	Replacment	No
3/4" Globe Valve	Henry Vogt   Machine Co. 	SN   1-216215	N/A	Item 1   RSO #2937-90   S1-TCW-544	N/A	  Replacement	No

## ASME Section XI Abstract Owner's Summary of Repair or Replacement

-	Owner:	Southern Ca	lifornia Edison ; Grove Ave.			Trave	eler: 501-90-026
						Unit:	1
2.	Plant:	San Onofre P. O. Box ]	Nuclear Generat 28, San Clement	ing Sta e, CA	92672	MMP:	1-3601.00SM
3.	Work Perfor	med by:	Bechtel Constru P. O. Box 450 San Clemente, (			CW0:	90080635000 90080856000
4.	System Iden	tification:	Turbine Plant (	Cooling	g Water (TPCW	/) P&ID:	5178320
5.	Plant Tag N	lo.: See NIS	5-2	Ser	rial No.: Se	e NIS-2	
6.	Component:	See NIS-2		Name:	See NIS-2	Size:	See NIS-2
7.	Code: ASA B for	816.5, 1957 E piping.	d. and ANSI B31 Class: XI-2	.1, 198	39 Ed. for va	lves, AN	ISI B31.1, 1980 Ed.
8.	Purpose (St	atement of F	Problem):				
	MMP 1-3601. S1-TCW-CV-2	00SM rerout	e portion of lin	ne S1-	TCW-CV-0743-8	3"-HM and	d add control valve
		DWG's 51783 7507, 7545,					
			•				
9.	Narrative S	ummary (Brie	f Description of	f Work	Performed):		
		ropriate doci	uments were revi	ewed t	o verify com	pliance	with the applicable
	2. Valves, 1-3601.0	piping and	associated hard ccordance with W	dware R5/5A	were install weld records,	ed in a , A, B, C	ccordance with MMP , D, SA, SB, SC, SD,
	3. A system	n hydrostatio	test with VT-2	was p	erformed.		
			· · ·		· · ·		
			. 1				

Date <u>12/26/90</u>

10. Material Used:

Prepared by:

. · ·

<u>Hoang Nguyen</u>

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See NIS-2

#### NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> <u>As Required by the Provisions of ASME Code Section XI</u>

1. Owner:		2244 Waln	California Edison Company ut Grove Ave.	Travel	er: S01-90-026
		Rosemead,	CA 91770	Unit:	1
2.	Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	MMP:	1-3601.00SM
3.	Work Perfo	rmed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90080635000 90080856000
4.	System Ide	ntification	: Turbine Plant Cooling Water (TPCW)	P&ID:	5178320

- Code Class XI-2. ANSI B31.1, 1980, for piping Code class: XI-2.
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A
- 6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	  Manufacturer  Serial No.	National Board No.	  Other  Identification	Year Built	Repaired  Replaced,or  Replacement	ASME Code Stamped Yes/No
3/4" Globe Valve	Vogt	3-216215	N/A	1tem #1   RSO #2937-90   S1-TCW-316	N/A	Replacement	No
3/4" Globe Valve	Vogt	4-216215	N/A	ltem #1   RSO #2937-90   S1-TCW-315	N/A	  Replacement	No
8" Control Valve	Velan Eng. Comp.	402159-2	N/A	Item #4   RSO #2641-90   S1-TCW-CV-2516	N/A	Replacement	No
B" Pipe Sch. 40S	USS Tubular Products	HT #   807850	N/A	Item #12   RSO #2586-90	H/A	Replacement	No
3"-3/4" Sockolet	WFI Nuclear Product Inc.	HT #   282 RNB	N/A	ltem #70 RSO #2613-90	N/A	Replacement	No
5/4" Pipe Sch 40S	Quanex Corp.	HT # 282922	N/A	ltem #213 RSO #2586-90	N/A	Replacement	No

7. Work Description:

MMP 1-3601.00SM installs control valve S1-TCW-CV-2516 and spool. Fabricate welds A, B, C, D, SA, SB, SC, SD, SE, SF, SG, and SH. Perform system hydrostatic test.

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] Pneumatic [] Other [] Pressure: 140 psig Temp: AMB Supplemental Sheet for NIS-2 Form Page 3 of 3

1. Owner:	Southern ( 2244 Waln	California Edison Company ut Grove Ave.	Traveler: S01-90-026		
	Rosemead,	CA 91770	Unit:	1	
2. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	MMP:	1-3601.00SM	
3. Work Performed by:		Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	90080635000 90080856000	

## 4. System Identification:

## P&ID: 5178320

Name Component	Name of Manufacturer	  Manufacturer  Serial No.	  National  Board No.	Other Identification	Year  Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
3/4" 90° Elbow	Capitol Mfg. Co.	HT #   R6S	N/A	Item # 5   RSO #2586-90	N/A	Replacement	No
3/4" Half Coupling	Capitol Mfg. Co.	HT # 080D	N/A	Item #78 RSO #2586-90	N/A	Replacement	No
3/4" Pipe Sch 40S	Quanex Corp.	HT # 282922	   N/A	Item #216   RSO #2586-90	N/A	Replacement	l No

## ASME Section XI Abstract Owner's Summary of Repair or Replacement

. Owr	ner:	Southern Ca 2244 Walnut	lifornia Edison Grove Ave.	Company	, .	Traveler:	S01-90-025
		Rosemead, C	4 91//0			Unit:	1
2. Pla	ant:	San Onofre   P. O. Box 1	Nuclear Generat 28, San Clement	ing Stat e, CA S	ion 2672	MMP:	1-3601.00SM
3. Woi	rk Perform	ed by:	Bechtel Constr P. O. Box 450 San Clemente,			CWO:	90080845000 90080635000
4. Sy:	stem Ident	ification:	Turbine Plant	Cooling	(TCW)	P&ID:	5178320
5. P1a	ant Tag No	See NI	S-2	Seri	al No.:	See NIS-2	
5. Cor	mponent:	See NIS-2		Name:	See NIS-2	2 Size: S	See NIS-2
7. Co	de: ASA B pipi	16.5, 1957 E ng. Clas	d. and ANSI B31 s: XI-2	.1, 1980	Ed. for	valves ASA	B31.1, 1955 Ed. for
B. Pui	rpose (Sta	tement of P	roblem):	. '			
MMI S1-	P 1-3601. -TCW-CV-35	.00SM rerou 15.	tes portion	of line	S1-TCW	-0756-8"-HM	and adds valve
		WG's: 71447: 07, M-7565	3, 5178320				
9. Nai	rrative Su	mmary (Brie	f Description o	f Work P	erformed	):	
2.	construct Valves, p 3601.00SM D, E, F, (	ion code. iping & ass and in acco G and J.	ociated hardwa	re were e WR5/5A	installe weld rec	ed in accor	ith the applicable dance with MMP 1- , SC, SD, A, B, C,
	÷						
0. Ma	aterial Us	ed:		•			
See	e NIS-2	 			•		· .

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT As Required by the Provisions of ASME Code Section XI

1. Owner:		Southern C 2244 Walnu	alifornia Edison Company t Grove Ave.	Traveler:	S01-90-025
		Rosemead,	CA 91770	Unit:	1
2.	Plant:	San Onofre P. O. Box	San Onofre Nuclear Generating Station P. O. Box 128, San Clemente, CA 92672		1-3601.00SM
3.	Work Perfor	med by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CMO:	90080845000 90080635000
<b>!</b> .	System Ider	tification:	Turbine Plant Cooling Water	(TCW) P&ID:	5178320

- 5. (a) Applicable Construction Code: ASA B16.5, 1957 Ed. & ANSI B31.1, 1980 Ed. for valves Code Class: XI-2 ASA B31.1, 1955 Ed. for piping Code Class: XI-2.
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A
- 6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	Manufacturer ISerial No.	National Board No.	  Other  Identification	  Year  Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
3/4" Globe Valve	Henry Vogt Henry Cogt	SN  2-216215	N/A	Item 1   RSO #2937-90	N/A	Replacement	No
8" Control Valve	Velan Eng. Comp.	SN  902159-1  S1-TCW-DV-3515	• <b>N/A</b> •	Item 4   RSO #2641-90	N/A	Replacement	No
8" Pipe Sch Std/40	USS Tubular Products	нт #  807850	N/A	ltem 11 RSO #2586-90	N/A	  Replacement	No
8" S.R. Elbow 90°	Taylor Forge	HT #  LBBC	N/A	Item 271   RSO #2613-90	N/A	Replacement	   No
8" T <del>ee</del> Sch. 40	Tube Forgings of America	HT #  NN45	N/A	Item 950 RSO #2586-90	N/A	  Replacement	   No
B" x 4" Reducer	Tube Forgings	HT # F48	**   **N/A	Item 951   RSO #2586-90	N/A	Replacement	No

7. Work Description: A second a second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second

MMP 1-3601.00SM, reroute line sl-TCW-0756-8"-HM and adds valve Sl-TCW-CV-3515. Fabricate welds SA, SB, SC, SD, A, B, C, D, E, F, G, and J. Perform system hydrostatic test.

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] Pneumatic [] Other [] Pressure: 140 psig Temp: AMB

## Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

#### CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this replacement conforms to the rules of the ASME Code, Section XI (Repair or Replacement) <u>bc. 23</u>, 19<u>90</u> Signed FLD CONST. MGR. (Date) (Owner or Owner's Designee) Title

### CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by \*Arkwright Mutual Insurance Company of Norwood, Massachusetts have inspected the components described in this Owner's Report during the period from  $\frac{9/21/90}{100}$  to 1/2/91 and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

<u>Inspector's Signature</u>	Commissions <u>1862</u> (State or Pro	A ovince, National Board
Date Agnician 2		

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form. 法认为消益的现代 经公司的保险 计增加法 化化合同 经济利益 建成分子的建立 计分子的 计正确分析的

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Supplemental Sheet for NIS-2 Form Page 3 of 3

				= =
1. Owner:		California Edison Company nut Grove Ave.	Traveler:	
	Rosemead,	CA 91770	Unit:	
2. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	DCP:	
3. Work Perf	formed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	CWO:	
4. System Id	lentification	•	P&ID:	

## 4. System Identification:

ASME Code Repaired Stamped Replaced, or Year Other Name of Manufacturer INational Name Replacement Yes/No Board No. Identification Built Component Manufacturer Serial No. Item 70 8" X 3/4" |HT # WFI Nuclear RSO #2613-90 | N/A Replacement N/A No 282 RNB Sockolet Prod. Inc. HT # 282922 Item 217 3/4" Pipe Quanex Replacement N/A No RSO # 2586-90 Sch Std/40 N/A Corp. 3/4" ]HT # Item 5 Capitol RSO #2586-90 | N/A Replacement No N/A Elbow 90° Mfg. Co. R6S

## NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT As Required by the Provisions of ASME Code Section XI

2244 Walnut		alifornia Edison Company t Grove_Ave.	Traveler: S01-91-008		
	Rosemead,	CA 91770	Unit:	1	
2. Plant:	San Onofre P. O. Box	Nuclear Generating Station 128, San Clemente, CA 92674-0128	FCN:	F-5517M	
3. Work Perfo	rmed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CMO:	91020270000 91020491000	
4. System Ide	ntification:	Turbine Cooling Water (TCW)	P&ID:	5178320	
5. (a) Appl	icable Const	ruction Code: ASA B16.5, 1957 ED. (	Code Cla	ss: XI-2	
		and the second for Donot		-1	

Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A (b)

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
1/2" Plate	Grano Steel Corp.	Heat No. V01003	N/A	RSO# 0147-91	N/A	Replacement	No -
					1		
<b></b>		1	1				

7. Work Description: Antheory - Complete Martin Sectory -

FCN F-5517M installs a flow direction indicator on valve S1-TCW-CV-515, fabricates welds, TA & TB

8. Tests Conducted: None

## 9. Remarks:

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI (Repair or Replacement) Signed <u>Mathematican Frees Constr Mes</u> 3/19, 1991 (Owner or Owner's Designee) Title (Date)

CERTIFICATE OF INSPECTION	
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>*Arkwright Mutual Insurance Company</u> of <u>Norwood. Massachusetts</u> have inspected the components described in this Owner's Report during the period from $2/k3/9/$ to 3/k3/9/9/2 and state that to the best of my knowledge and belief, this repair or replagement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. *Factory Mutual System	
<u>Inspector's Signature</u> Commissions <u>1862</u> <u>CA</u> (State or Province, National Board	
Date <u>March 19</u> , 19 <u>91</u>	

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

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## NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

***********						
1. Owner:	2244 Walnut	Southern California Edison Company 2244 Walnut Grove Ave.		Traveler: S01-91-009		
	Rosemead, C	A 91770	Unit:	1		
2. Plant:	San Onofre P. O. Box 1	Nuclear Generating Station 28, San Clemente, CA 92674-0128	FCN:	F-5516M		
3. Work Per	formed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CWO:	91020270000 91020488000		
4. System I	dentification:	Turbine Cooling Water (TCW)	P&ID:	5178320		
5. (a) Ap	plicable Constr	uction Code: ASA B16.5, 1957 ED.	Code Cla	ss: XI-2		

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement		
1/2" Plate	Grano Steel Corp.	Keat No. V01003	N/A	RSC# 0147-91	N/A	Replacement	No	
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		t 19 - an the antiperiodical sector for the product of the						

7. Work Description:

FCN F-5516M installs a flow direction indicator on valve S1-TCW-CV-516, fabricates welds, TA & TB

8. Tests Conducted: None

2 **CF** 9

Page 2 of 2

FORM NIS-2 (back)

9. Remarks:

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI (Repair or Replacement) Signed <u>MAMaunan</u> FIELD CONST MC2 <u>3/19</u>, 1991 (Owner or Owner's Designee) Title (Date)

CERTIFICATE OF INSPECTION
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>*Arkwright Mutual Insurance Company</u> of <u>Norwood</u> , <u>Massachusetts</u> have inspected the <u>components described in this Owner's Report during the period from <u>2/13/9/</u> to <u>3/19/9/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. *Factory Mutual System</u>
<u>Inspector's Signature</u> Commissions <u>1862</u> <u>CA</u> Inspector's Signature Date <u>March 19</u> , 19 <u>91</u>
Date_ <u>March 19</u> , 19 <u>91</u>

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

### **NIS-2** <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

1 M A 2

<b>5</b> 376253532731		======================================		
2244 Walnu		alifornia Edison Company t Grove Ave.		ler: S01-91-012
	Rosemead,	CA 91770	Unit:	1
2. Plant:	San Onofre P. O. Box	Nuclear Generating Station 128, San Clemente, CA 92674-0128	FCN:	F-5518M
3. Work Perfo	rmed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CWO:	91020270000 91020495000
4. System Ide	ntification:	Turbine Cooling Water (TCW)	P&ID:	5178130
5. (a) Appl	icable Const	ruction Code: ASA B16.5, 1957 ED. (	Code Cla	ss: XI-2

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	
1/2" Plate	Grano Steel Corp.	Heat No. V01003	N/A	RSO# 0147-91	N/A	Replacement	No
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7. Work Description: control of the probability of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of

FCN F-5518M installs a flow direction indicator on valve S1-TCW-CV-525, fabricates welds, TA & TB

8. Tests Conducted: None

Page 2 of 7

## 9. Remarks:

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the rules of the ASME Code, Section XI (Repair or Replacement)

Signed <u>UAMacoulor FIEW CONSTMER</u> 3/19, 1991 (Owner or Owner's Designee) Title (Date)

CERTIFICATE OF INSPECTION
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>*Arkwright Mutual Insurance Company</u> of <u>Norwood</u> . <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>2/13/6/</u> to <u>3/19/9/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. *Factory Mutual System
<u>Childmann</u> Commissions <u>1862</u> <u>CA</u> Inspector's Signature (State or Province, National Board
Date_ <u>March 19</u> , 19 <u>91</u>

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

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	<u>Owne</u>	<u>R'S REPORT OF REPAIR OR</u>	<u>REPLAC</u>	<u>EMENT</u>	
		As Required by the Provisions of ASME Coo	le Section XI		•
		· · ·	Sheet	1 of 1	
1.		ifornia Edison Company Grove Ave., Rosemead, CA 91770	ASME	MO: 89083644	
2.	Plant: San Onofre N	Suclear Generating Station	Unit:	1	
	P.O. Box 128	, San Clemente, CA 92674-0128	RS:	731-89	
3.	Work Performed by:	Southern California Edison	P&ID:	5178231 (B-2)	
4.	System Identification	High Pressure Turbine			·

NIS-2

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- (a) Applicable Construction Code: Valve: BSO-561, M-18690; System: ASME Section I, 1962 Edition, Code Classified XI-2, Code Cases: None
  - **(b)** Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
6" Gate Valve	Pacific Valve	44750A	N/A	S1-TEP-MOV-14	N/A		No
L/4" NPT Plug	Colonial Machine Co.	Ht. Code AEM	N/A	RSO 2291-90 SA-105	N/A	Replacement	No

#### 7. Work Description:

5.

Packing gland leak-off plug was seal welded in conjunction with the installation of live-load packing. Welding was performed in accordance with ASME Section III, 1989 Edition, no Addenda, as provided for in ASME Section XI, paragraph IWA-4120. The replacement packing gland leak-off plug was verified to be in compliance with the original construction code. After reinstallation a seal weld was performed to the plug/valve bonnet. A NDE-MT (1MT-023-90) was conducted on the affected weld area with no relevant indications. A VT-2 examination was conducted in conjunction with a system functional pressure test with no leakage noted.

## References: WR1-89-979, Packing Manual M-40658

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Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic []

Pneumatic [] Other [] Pressure: 555 psig Temp: N/A

9.	Remarks:	None				
		(Applicable M	Ianufacturer's Data Reports to	be attached)		
	· .					
		CERTIF	ICATE OF COMPL	<u>LIANCE</u>		
	f the ASME C	ode, Section XI.	eport are correct and thi Supvg. ASME Codes	(repair or re	placement) <u> <u> </u> <u> </u> (Date)</u>	
	(Owner	or Owner's Designee)	Title		(Date)	
						·
		CERTI	FICATE OF INSPE	CTION		
Insp (Fac Rep my ASM or i emp	bectors and the <u>etory Mutual Sy</u> bort during the knowledge and ME Code. By si mplied, concern ployer shall be I	e State or Province of <u>(stem)</u> of <u>Norwood</u> , <u>Mas</u> period from <u>5/29</u> belief, this repair or ref gning this certificate, ne ning the repair or replace	ssion issued by the Nation <u>California</u> , employed by <u>sachusetts</u> have inspected <u>90</u> to <u>67</u> blacement has been perfor- ither the Inspector nor his cement in this Report. F any personal injury or pro-	Arkwright M the componen (19/2) rmed in accord s employer mai furthermore, no	<u>futual Insur</u> ts described and state tha ance with Se kes any warr either the In	ance Company in this Owner's at to the best of ection XI of the anty, expressed spector nor his
	APPlace	Commissi	ons <u>196-2 Califor</u>	mia		
Ins	pector's Signat	ure	(State or Province, Na	ational Board)		
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Dat	. Ann	<u>e7, 1991</u>				
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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		OWNER'S	REPORT OF REPAIR OR REP s Required by the Provisions of ASME Code Section	LACEN on XI	VICINI	
		A	s Required by the Provisions of Asian Court	Sheet 1	ot 1	
1.	. Owner: Southern Californi 2244 Walnut Grov		rnia Edison Company	ASME MO:		90090911000 90090911001
			rove Ave., Rosemead, CA 91770	Unit:	1	
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128		RS:	323-90	Rev. 1	
3.	Work ]	Performed by:	Southern California Edison	P&ID:	517813	35 (F-6)
4.	System Identification:		Volume Control and Charging			

## NIS-2 VNER'S REPORT OF REPAIR OR REPLACEMENT

5. (a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified: XI-2, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

# 6. Identification of Components Repaired or Replaced:

ſ	Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No	
	2" Sch 160 Piping		N/A	N/A	S1-VCC-2003-3"- BR3	R/A	Repaired	No	

## 7. Work Description:

Arc strikes documented on NCR 90090060 were blended out. Less than 1/32<sup>•</sup> of base material was removed. No weld repairs were required. The blended areas were examined by UT to verify the minimum required design wall thickness.

Reference: NCR 90090060

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [] Pneumatic [] Other []

Pressure: N/A psig Temp: N/A F Pressure: N/A psig Temp: N/A F Pressure: Pressure and the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of

у.	Remarks: None	
	(Applicable Manufacturer's Data Reports to be attached)	
	CERTIFICATE OF COMPLIANCE	
We cer	ify that the statements made in this report are correct and this <u>repair</u> confe the ASME Code, Section XI. (repair or replacement)	orms to the
Signed	AN And Supre ASME Codes Engineer 23 April	19_1
	(Owner or Owner's Designee) Title (Date)	,
·		
	CERTIFICATE OF INSPECTION	
Insp (Fa	c undersigned holding a valid commission issued by the National Board of Boiler and Pre- ectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insuran</u> ory <u>Mutual System</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in ort during the period from $9/25/90$ to $4/20/91$ and state that t	<u>ce Company</u> this Owner's
my ASI	nowledge and belief, this repair or replacement has been performed in accordance with Sect E Code. By signing this certificate, neither the Inspector nor his employer makes any warran	ion XI of the ty, expressed
or i	aplied, concerning the repair or replacement in this Report. Furthermore, neither the Insp over shall be liable in any manner for any personal injury or property damage or a loss of an	ector nor his
	or connected with this inspection.	Kind ansing
	California 1574	
Ins	ector's Signature (State or Province, National Board)	
Dat	<u>-pril 24 1991</u>	
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Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

As Required by the Provisions of ASME Code Section XI Sheet 1 of 1 91010368 ASME MO: Owner: Southern California Edison Company 1. 2244 Walnut Grove Ave., Rosemead, CA 91770 Unit: 1 Plant: San Onofre Nuclear Generating Station 2. P.O. Box 12S, San Clemente, CA 92674-012S RS: 003-91 P&ID: 5178135 (H-3) Southern California Edison Work Performed by: 3. Volume Control & Changing System System Identification: 4.

- 5. (a) Applicable Construction Code: ASA B31.1, 1955 Edition, Code Classified XI-2), Code Cases:
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Pipe		S1-VCC-2013-3-	N/A	S1-VCC-2013	N/A		No
1%" x 6" Bar Stock	CyTemp	1G7203	N/A	RSO 3608-90 SA-479, Tp 316	1990	Replacement	No

#### 7. Work Description:

None

A plug was fabricated out of bar stock and installed on line 2013 because S1-VCC-317 could not be tested for seat leakage. The processed required cutting out a section of line 2013 for installation of the plug between S1-VCC-316 and 317 (approx. distance 2"). The replacement material was verified as being compatible with the installation and system requirements. The bar stock was installed by welding.

Reference: NCR 91010019, WR1-91-004, FCN S-5458-M, S5457M

**8.** 

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] other and a state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of

## NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

W. T. FRANCE



9. Remarks: None

(Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this <u>replacement</u> conforms to the (repair or replacement) rules of the ASME Code, Section XI.' Supry. ASME Codes Engineer ZI March 199/ Title (Date) Signed Title (Owner or Owner's Designee)

# CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u>, employed by <u>Arkwright Mutual Insurance Company</u> (Factory Mutual System) of Norwood, <u>Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>1/5/91</u> to <u>3/21/91</u> and state that to the best of my knowledge and belief, this repair of replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Commissions 1862 California (State or Province, National Board) Inspector's Signature Date March 21, 19 91

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	OWNER'S REPORT OF REPAIR OR	
	As Required by the Provisions of ASME Code	
		Sheet 1 of 1
1.	Owner: Southern California Edison Company 2244 Walnut Grove Ave., Rosemead, CA 91770	ASME MO: 90070262
	2244 Walnut Grove Ave., Rosellicad, CA 91770	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	<b>RS:</b> 268-90
3.	Work Performed by: Southern California Edison	P&ID: 5178135 (G-6)

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

4. System Identification: Volume Control and Charging

- (a) Applicable Construction Code: ASA B31.1, 1955 Edition (System), Westinghouse E-Spec. 675268 (Valve), Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of . Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" Globe Valve	Edwards	N/A	N/A	S1-VCC-307	Ň/A	Replaced	No
2" Gate Valve	Anchor/ Darling	EB267-4-7	N/A	RSO 1926-90 SA-351, Gr CF8M	1990	Replacement	Yes
2" Sch. 160 Pipe	Combustion Engineering	N/A	N/A	RSO 2198-90 SA-312, Tp. 304L ME-90-046	N/A	Replacement	No

#### 7. Work Description:

Per MMP 1-3617.OOSM, the existing globe valve was removed in preparation for the installation of the replacement gate valve. The replacement gate valve was verified as being suitable for plant position S1-VCC-307 as documented on Code Reconciliation CR-89-002. The replacement pipe was verified as meeting ASA B31.1 as documented on Code Reconciliation ME-90-046. The replacement items were installed in accordance WR1-90-540. PT examinations were performed on the socketwelds and radiographic examinations were performed on the buttwelds.

8.

5.

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] Pneumatic [] Other [X] VT-2 examination was performed. Pressure: 3600 psig Temp: N/A

	(Applicable Manufacturer's Data Reports to be attached)
	CERTIFICATE OF COMPLIANCE
/e ce iles (	conforms to the the ASME Code, Section XI. (Owner or Owner's Designee) Title (Date) Conforms to the Conforms to the (repair or replacement) (Owner or Owner's Designee) Title (Date)
	CERTIFICATE OF INSPECTION
HER HADEL IV	the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel spectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Company</u> <u>Sactory Mutual System</u> ) of <u>Norwood</u> , <u>Massachusetts</u> have inspected the components described in this Owner's eport during the period from <u>09/04/90</u> to <u>04420/91</u> and state that to the best of y knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the SME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his nployer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising om or connected with this inspection. <u>State or Province</u> , National Board)
	nspector's Signature (State or Province, National Board)

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

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NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

	As Required by the Provisions of ASME Co	
		Sheet 1 of 1
1.	Owner: Southern California Edison Company	ASME MO: 90070268
	2244 Walnut Grove Ave., Rosemead, CA 91770	Unit: 1
2.	Plant: San Onofre Nuclear Generating Station P.O. Box 128, San Clemente, CA 92674-0128	RS: 267-90
3.	Work Performed by: Southern California Edison	P&ID: 5178135 (F-6)

4. System Identification: Volume and Chemical Control

- 5. (a) Applicable Construction Code: ASA B31.1, 1955 Edition, Westinghouse E. Spec E676171, Code Classified XI-2, Code Cases: None
  - (b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
2" Globe Valve	Anchor Darling	N/A	N/A	S1-VCC-308	N/A	Replaced	N/A
2" Globe Valve	Anchor Darling	EB267-4-10	N/A	RSO 1926-90 SA351-CF8M	1990	Replacement	Yes (N)
2" Sch 160 Pipe	Guyon Alloys, Inc.	Et. 121284	N/A	RSO 2198-90 SA-312, Tp. 304L	N/A	Replacement	No

#### 7. Work Description:

The existing globe valve was replaced with an Anchor Darling 1878 class double disc gate valve per design change MMP #1-3617.OOSM. Code differences between the original construction code/specification were reconciled for the replacement valve and pipe. The replacements were welded into the system in accordance with WR1-90-539. A PT examination was performed on the socket welds and the butt weld was examined by radiography.

Reference: Reconciliation CR-89-002, Rev.1 (replacement valve) Reconciliation ME-90-47 (replacement pipe)

ราการไปการมาย และสมัครณาไป มีสาย ไปไม่มีสุดที่สายมายมายในสายมายการการสายสำนัก (การสายสาย) การการไปการมาย (การสายไปแก่สุดเลยและ แต่สุดที่สุดที่สุด สายผู้สุดสายสายสาย (การสายสายควาร) (การส และ (การการการสายสายไปแก่สุดสายสายผู้สุดสายสายสายสายสายสายสายสายสายสาย (การสายสายควาร) (การสาย

8. Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [X] Pneumatic [] Other [X] VT-2 Examination Pressure: 3600 psig Temp: Ambient

<u>CERTIFICATE OF COMPLIANCE</u> Ve certify that the statements made in this report are correct and this <u>replacement</u> conforms to ules of the ASME Code, Section XI. (repair or replacement)
e certify that the statements made in this report are correct and this <u>replacement</u> conforms to
e certify that the statements made in this report are correct and this <u>replacement</u> conforms to
e certify that the statements made in this report are correct and this <u>replacement</u> conforms to les of the ASME Code Section XI. (repair or replacement)
MANN 1091
igned <u>AC / Supvg. ASME Codes Engineer &amp; / (7) 19 /</u> (Owner or Owner's Designee) Title (Date)
I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vess Inspectors and the State or Province of <u>California</u> , employed by <u>Arkwright Mutual Insurance Compa- (Factory Mutual System) of Norwood, Massachusetts have inspected the components described in this Owner Report during the period from <math>09/05/90</math> to <math>05/09/9/1</math> and state that to the best my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, express or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor employer shall be liable in any manner for any personal injury or property damage or a loss of any kind ariss from or connected with this inspection. Massachusetta (State or Province, National Board)</u>
Date May 9 1991

Note: Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

	NIS-2	
OWNER'S REPORT	OF REPAIR OF	R REPLACEMENT

	As Required by the Provisions of ASME Code Section AI							
1.		lifornia Edison Company	ASME MO:	89112850, 90031813				
	2244 Walnut G	Grove Ave., Rosemead, CA 91770	Unit:	1				
2.		Nuclear Generating Station 3, San Clemente, CA 92674-0128	RS:	120-90, 147-90				
3.	Work Performed by:	Southern California Edison	P&ID:	5178136/grid F-7				

4. System Identification: Chemical and Volume Control (VCC)

- 5. (a) Applicable Construction Code: ASA B31.1, 1955 Edition (Piping System) Cases: None (Applicable Valve Manufacturing Code: Westinghouse Equipment Specification 675268)
  - (b) Applicable Edition of ASME B&PV Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None
- 6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.		Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
1" S.S. Globe Valve	Powell Valve Co.	not recorded	N/A	S1-VCC-354	N/A	Replaced	No
1" S.S. Globe Valve	Powell Valve Co.	1499	N/A	RSO 2614-89	N/A	Replacement	No

#### 7. Work Description:

The valve leaked by excessively and was scheduled for replacement. The valve procured for this replacement did not have evidence that a proper hydrostatic pressure test or seat leakage pressure test had been performed and was not certified as meeting the original Westinghouse equipment specification requirements. The replacement valve was successfully subjected to a hydrostatic test and a seat leakage test by SCE as documented in ASME M.O. 90031813. An ASME Section XI IWA-7210 (c) substitute material evaluation was performed and the valve was found to be acceptable. Reference ASME XI Certificate of Compliance number ME-90-15. The valve was installed by welding as documented on safety related ASME XI weld record WR1-90-292 and non-safety related weld record WR1-90-293 (the valve is boundary).

Tests Conducted: System Leakage [] System Functional [] System Inservice [] Hydrostatic [x] Pneumatic [] Other []

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Pressure: 156 psig Temp: not recorded (ambient)

).	Remarks:	The hydrostatic tests	s of the valve perfor	med as per M.O. 9	00031813 was as	follows:
	Remains.	A) full valv	e body/bonnet: 67	0 psig for 10 minut 530 psig for 10 mir	es	
		(Applicable M	anufacturer's Data Rep:	orts to be attached)		
		CERTIF	ICATE OF CO	MPLIANCE		
Ve cert ules of	the ASME Cod			(repair or re	placement)	forms to the
Signed_		r Owner's Designee)		odes Engineer lle	<u>-24</u> (Date)	<u>9 5</u> 1
-						<u> </u>
Insp (Fac Rep my k ASM or ir emp fron	ectors and the s tory Mutual Syst ort during the per mowledge and be fE Code. By sign nplied, concernin loyer shall be lial or connected w	olding a valid commiss State or Province of <u>em</u> ) of Norwood Mass eriod from <u><u>4/14</u> elief, this repair or rep ing this certificate, nei ong the repair or replace ble in any manner for a much this inspection. <u>SAM</u> Commissione <u>Commissione</u></u>	<u>California</u> , employed sachusetts have insp <u>L</u> <u>9</u> to lacement has been f ther the Inspector n tement in this Repo any personal injury of ons <u>L</u> <u>6</u> <u>2</u> <u>0</u>	d by <u>Arkwright M</u> ected the componen <u>12791</u> arformed in accord or his employer mal or his employer mal rt. Furthermore, ng or property damage.	Iutual Insurance its described in t and state that to lance with Section kes any warrant wither the Inspe-	the best of on XI of the y, expressed ctor nor his
Note:	x 11 in., (2) info	heets in the form of li ormation in Items 1 th	rough 4 on this dat	a report is included	i on each sheet	
	sheet is number	red and the number o	f sheets is recorded	at the top of this f	orm.	

# 1 GF 10

# NIS-2 <u>OWNER'S REPORT OF REPAIR OR REPLACEMENT</u> As Required by the Provisions of ASME Code Section XI

	***********	=======================================		
1. Owner:	Southern Ca	lifornia Edison Company Grove Ave.	Trave	ler: S01-91-015
	Rosemead, C	A 91770	Unit:	1
2. Plant:	San Onofre P. O. Box 1	Nuclear Generating Station 28, San Clemente, CA 92674-0128	FCN:	F-5519M
3. Work Perfo		Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92674-0128	CMO:	91020270000 91020498000
4. System Ide	entification:	(VCC) Volume Control & Charging	P&ID:	
5 (a) App]	icable Const	ruction Code: ASA B16.5, 1957 ED.	Code Cla	ass: XI-2
(b) App 197		on of Section XI Utilized for Repa hru S'78 Addenda, Code Cases: N/A	irs or Re	eplacements:

6. Identification of Components Repaired or Replaced:

	Name of Manufacturer	Kanufacturer Serial No.	Kational Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
1/2" Plate	Grano Steel Corp.	Heat No. V01003	N/A	RSO# 0147-91	H/A	Replacement	КO
<u> </u>							
· · · ·	·		-		1		

7. Work Description:

FCN F-5519M installs a flow direction indicator on valve S1-VCC-CV-528, fabricates welds, TC & TD

8. Tests Conducted: None

Page 2 of 2

2 **CF** 10

FORM NIS-2 (back)

## 9. Remarks:

Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

# CERTIFICATE OF COMPLIANCE

Title

We certify that the statements made in this report are correct and this replacement conforms to the rules of the ASME Code, Section XI (Repair or Replacement) FIED CONSTMER 3/19, 1971 Signed Ull Maco

(Owner or Owner's Designee)

# CERTIFICATE OF INSPECTION I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company of Norwood, Massachusetts</u> have inspected the <u>\*Arkwright Mutual Insurance Company of Norwood, Massachusetts</u> have inspected the <u>Components described in this Owner's Report during the period from <u>.2/13/9/</u> to <u>.3/19/9/</u> and state that to the best of my knowledge and belief, this repair or <u>.3/19/9/</u> and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By replacement has certificate, neither the Inspector nor his employer makes any warranty, signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System</u>

Inspector's Signature Commissions (State or Province, National Board n/nnl. 19. 1991 Date

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.



# ASME Section X1 Abstract Owner's Summary of Repair or Replacement

· 汉 美描句: 《 (the s)。

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1.	Owner:		alifornia Edison Grove Ave.	n Company	Trave	ler: S01-90-035
		Rosemead, (	CA 91770		Unit:	1
2.	Plant:	San Onofre P. O. Box	Nuclear Generat 128, San Clement	ting Station te, CA 92672	MMP:	1-3659.00SN
3.	Work Perf	ormed by:	Bechtel Const P. O. Box 450 San Clemente,		CWO:	90110797000 90110760000 90110840000
4.	System Id	entification:	Volume Contro	l and Charging Sy	vstem (VCC)	P&ID: 5178032
5.	Plant Tag	No.: S1-VCC	-MOV-1100E	Serial No.:	See NIS-2	
6.	Component	: See NIS-2		Name: See NIS-	2 Size: 4	11
7.	Code: ASA ASA	B31.1, 1955 H B16.5, 1957 H	Ed. for Piping Ed. for Valves	Class: XI-2		
8.	Purpose (	Statement of I	Problem):			
	MMP 1-3659	9.00SN, Rev. (	) adds S1-VCC-M	OV-1100E and Relo	ocates S1-VC	C-MOV-1100C.
	Associated	d Dwgs: 334629	9, 5217786, FIDO	CN M-7624		
9.	Narrative	Summary (Brie	of Description of	of Work Performed	):	
		appropriate struction code		reviewed to ver	ify compliar	ice with applicabl
	MMP	1-3659.00SN a	ind in accordance	hardware were ce with WR5/5A we G, SA, SB, SC, S	ld records	in accordance wit as follows:
	DWG.	5217786 - SA	l .			
	3.) A sy	vstem hydrosta	tic test with N	/T-2 was performe	d.	
		Used:		•		

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Prepared by: <u>Les Taylor</u>

·. •]

\_\_\_ Date \_\_\_\_2/21/91

## NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT As Required by the Provisions of ASME Code Section XI

1.	Owner:	Southern Ca 2244 Walnut	lifornia Edi: Grove Ave.	son Company	·		Travel	er: SOI	-90-	-035
		Rosemead, C	A 91770				Unit:	1		
2.	Plant:	San Onofre P. O. Box 1	Nuclear Gener 28, San Cleme	rating Stati ente, CA 92	ion 2672	•	MMP:	1-3659.0	OSN	
3.	Work Perf	ormed by:	Bechtel Con P. O. Box 4 San Clemente	50			CWO:	90110797 90110760 90110840	0000	
4.	System Id	entification:	Volume Conti	rol and Char	ging	System	1 (VCC)	P&IC	):	5178032
5.	(a) App	licable Constr	uction Code:	ASA B16.5, ASA B31.1,	1957 1955	Ed., f Ed., f	for Valve for Pipe,	CODE C	LASS	5: XI-2
	<i>/</i> // ·			VT 114474-04	l fam	Donair	on Por	lacomont		

Applicable Edition of Section XI Utilized for Repairs or Replacements: (b) 1977 Edition, thru S'78 Addenda, Code Cases: N/A

6. Identification of Components Repaired or Replaced:

Name Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired  Replaced,or  Replacement	ASME Code Stamped Yes/No
4" Elbow 90°	HUB	HT #460291	N/A	Item #3,6  RSO #3465-90	N/A	Replaced	No
4ª Dia Pipe	HUB	HT #L31277		ltem #4, 8  RSO #3465-90	N/A	  Replaced	No
4" x 1" Sockolet	HUB	HT #242SNA		Item #5  RSO #3465-90	N/A	  Replaced	  No
1º Dia Pipe	I HUB	HT #470771		Item #9,11  RSO #3465-90	N/A	  Replaced	No

## 7. Work Description:

MMP 1-3659.00SN, Rev. 0, add S1-VCC-MOV-1100E, and relocate S1-VCC-MOV-1100C. Fabricate welds (DWG 334629) A, B, C, D, E, F, G, SA, SB, SC, SD & (DWG 5217786) SA. Perform system hydrostatic test.

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Page 2 of

FORM NIS-2 (back)

9. Remarks:

# Documentation for items listed in Block 6 are available onsite. (Applicable Manufacturer's Data Reports to be attached)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this replacement conforms to the rules of the ASME Code, Section XI (Repair or Replacement) Signed  $\frac{i}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{2}{$ 

## CERTIFICATE OF INSPECTION

I, the undersigned holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>California</u> employed by <u>\*Arkwright Mutual Insurance Company</u> of <u>Norwood, Massachusetts</u> have inspected the components described in this Owner's Report during the period from <u>12/17/90</u> to  $\frac{2}{23/91}$  and state that to the best of my knowledge and belief, this repair or replacement has been performed in accordance with Section XI of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. \*Factory Mutual System

<u>Annalan</u> Commissions <u>1862</u> <u>CA</u> 's Signature (State or Province, National Board Inspector's Signature Date <u>February 23</u>, 19<u>91</u>

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet is recorded at the top of this form.

Supplemental Sheet for NIS-2 Form Page 3 of 3

1. Owner:	Southern	 California Edison Company ut Grove Ave.	Traveler: S01-90-035 Unit: 1 MMP: 1-3659.00SN CWO: 90110797000 90110760000
	Rosemead,	CA 91770	Unit: 1
2. Plant:	San Onofr P. O. Box	e Nuclear Generating Station 128, San Clemente, CA 92672	MMP: 1-3659.00SN
3. Work Per	formed by:	Bechtel Construction Co. P. O. Box 450 San Clemente, CA 92672	

4. System Identification: Vol. Control and Charging System (VCC) P&ID: 5178032

Name Component	Name of Manufacturer	  Manufacturer  Serial No.	  National  Board No.	Other Identification	Year Built	Repaired Replaced,or Replacement	ASME Code Stamped Yes/No
1" Elbow 90°	HUB	HT #12579	N/A	Item #10  RSO #3465-90	N/A	Replaced	No
1/2" Dia Pipe Cap	CAMCO	HT #EGO	N/A	Item #45 RSO #3589-90	N/A	Replaced	No
4" Valve	Westinghouse	Serial No. 040000GM82 - FDB18D00S740001	N/A	  Item #2  RSO #3272-90	1977	Replaced	Yes
1" Valve	   VOGT	Serial No.   1-216108	N/A	Item #12  RSO #3562-90	N/A	Replaced	No

		· · · · · · · · · · · · · · · · · · ·	Sheet 1	l of 1		
1.	Owner: Southern Calif	ornia Edison Company	ASME MO: 90010413			
2244 Walnut C	Grove Ave., Rosemead, CA 91770	Unit:	1			
2.	Plant: San Onofre N P.O. Box 128,	<b>RS:</b> 104-90				
3.	Work Performed by:	Southern California Edison	P&ID:	517813	36	
4.	System Identification:	Volume and Chemical Control				

NIS-2 OWNER'S REPORT OF REPAIR OR REPLACEMENT

 (a) Applicable Construction Code: ASME Section VIII, Westinhouse E-Spec. 675262 & M-35760, Code Cases: None

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements: 1977 Edition, S'78 Addenda, Code Cases: None

6. Identification of Components Repaired or Replaced:

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped Yes/No
Relief Valve	Crosby	28787	N/A	S1-VCC-RV-289			No
Disc	Crosby	81459-35-0003	N/A	RSO 8358-84	N/A	Replacement	No .

#### 7. Work Description:

5.

The relief valve failed its bench test. The valve disc required replacement. The replacement was verified to be in compliance with the original construction code. A VT-2 examination was conducted in conjunction with a system functional pressure test with no leakage noted.

Reference: NCR 90080260

Tests Conducted: System Leakage [] System Functional [X] System Inservice [] Hydrostatic [] Pneumatic [] Other [] Pressure: 22 psig Temp: N/A

	Remarks:	None						
			(Applicable Man	ufacturer's	Data Reports to	o be attached)		
			•					
			CERTIFI	CATE C	OF COMP	LIANCE		
ules of	tify that the sta f the ASME C	atements ma ode, Section	ade in this rep n XI.			(repair or	replacement)	conforms to the $199/$
signed_	(Owner	or Owner's	s Designee)	<u>Supvg.</u>	ASME Codes Title	Engineer	(Date)	1/
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Insr (Fac Rep my) ASN or i from	ectors and the ctory Mutual Sy- ort during the knowledge and ME Code. By si- mplied, concer	e State or vstem) of No period from belief, this igning this ca ning the rep liable in any with this in	Province of <u>Corwood</u> , Massion <u>7//7/2</u> repair or replace ertificate, neit pair or replace manner for a aspection.	California, achusetts 1 Accement h her the In ment in t ny person	employed b nave inspecte to <u>5//6</u> as been perfo spector nor h his Report. al injury or pa	by <u>Arkwright</u> d the compon 5/9/ formed in acco is employer n Furthermore, roperty damag	Mutual Insur ents described and state that ordance with S nakes any war neither the In ge or a loss of	Pressure Vessel ance Company in this Owner's at to the best of ection XI of the ranty, expressed aspector nor his any kind arising
Dat	e <u>Mon 11</u>	5	1991					
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Supplemental sheets in the form of lists, sketches, or drawings may be used provided (1) size is 8-1/2 in. Note: x 11 in., (2) information in Items 1 through 4 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form. . · .