



DRAGON VALVES, INC.

13457 EXCELSIOR DRIVE • NORWALK, CALIFORNIA 90650
CABLE ADDRESS DRAGONVALVE NORWALK

December 15, 1982
N30108A

RECEIVED
NRC
1982 DEC 13 PM 12 37
213-921-6605
213-773-3883

United States Nuclear Regulatory Commission
Office of Inspection and Enforcement, Region V
1450 Maria Lane - Suite 210
Walnut Creek, CA 94596

Attention: Mr. Bob Dodds

Reference: Arizona Public Service Co.
Palo Verde Nuclear Generating Station
Bechtel Power Corp. Deficiency Evaluation Report No. 82-48
Dragon Valves Excess Flow Check Valves

Gentlemen:

We have recently received word from Bechtel Power Corp. that the above referenced Deficiency Evaluation Report has been filed with the NRC by Arizona Public Service Co. as a 10CFR50.55(e) reportable deficiency. As required by 10CRF21.21, and to supplement the above referenced Deficiency Evaluation Report, the following information is provided:

1. The subject Excess Flow Check Valves are Dragon Valves' Model Number 14388. Dragon Drawing No. 14388, Revision A, which describes the valves as originally shipped to the site, is enclosed. The subject valves are unique to Palo Verde Nuclear Plant.

2. The failure of the component is that, when welding the inlet connection, the poppet sticks in the open position. The I.D. bore in the body is reduced in the weld area and this localized deformation contacts the rear portion of the poppet. The deficiency was first identified on the -3 and -3A in January 1982 at the site by Bechtel site construction personnel. The -1, -1A, -2 and -2A deficiency was identified in June or July of 1982 by Bechtel site construction personnel.

3. The Dragon Model 14388 was designed to the unique requirements of the purchase specification for the Palo Verde project. The inlet design, the area where the deformation during welding occurs, is also unique to the Palo Verde Project. This valve is designed at Bechtel's request to be inserted into a pipe socket and then fillet welded. Other projects using Dragon Valves Excess Flow Check Valves use a socket bore (for welding to pipe/tube using a fillet weld) or pipe/tube extensions welded to the valve bodies prior to hydrostatic and functional testing.

4A. Corrective action on the -3 and -3A valves was accomplished by reworking the valve inlet to a butt weld configuration and supplying a welding adaptor, welding the valve adaptor to the valve body with the poppet removed, boring out the valve

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MANUFACTURERS OF VALVES FOR INDUSTRY SINCE 1945

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United States Nuclear Regulatory Commission
Mr. Bob Dodds

December 15, 1982
Page 2

I.D. and reinstalling the poppet into the body weldment. The dis-assembly and welding was accomplished by Bechtel Power Corp. at the site. All other rework was accomplished by Dragon. The reworked valves were verified to function in accordance with the purchase specification requirements prior to returning them to the site. Bechtel has indicated that the reworked valves, once installed, have functioned satisfactory.

4B. The corrective action on the -1, -1A, -2 and -2A valves was accomplished by designing a new poppet configuration which would accomodate the I.D. bore dimension change without affecting the valve function. Sample modified poppets were sent to the site for Bechtel evaluation. The modified poppets were found to function after welding without further rework or modification. Modified poppets, enough for one power plant unit, were shipped to the site to be installed in valves for Unit 1. Units 2 and 3 valves will be returned to Dragon for installation of modified poppets. In both cases, a "M" was added to the part number to identify the valves with the modified poppet (i.e. 14388-1M).

4C. Dragon Valves' Drawing No. 14388, Revision D, the current revision, incorporating the modifications discussed above, is enclosed.

It is Dragon Valves' understanding that the rework/modification, as identified above, has proved effective in correcting the deficiency. Your office shall be notified of any further developments. Should further information be required, please contact the writer at (213) 773-3883.

Sincerely,

DRAGON VALVES, INC.



Kim D. Haggart
Q. A. Manager

KDH:kk

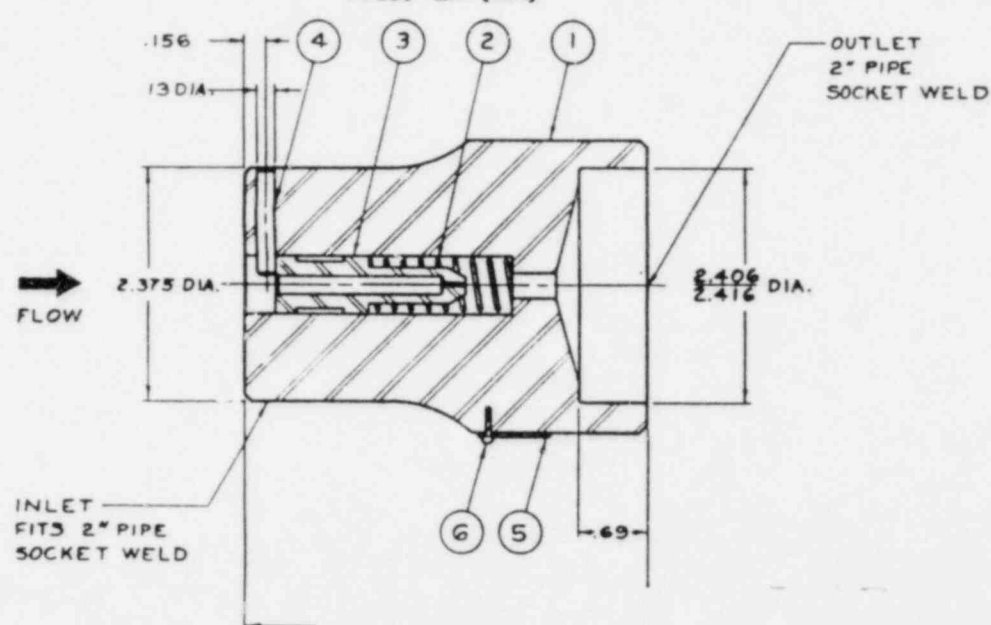
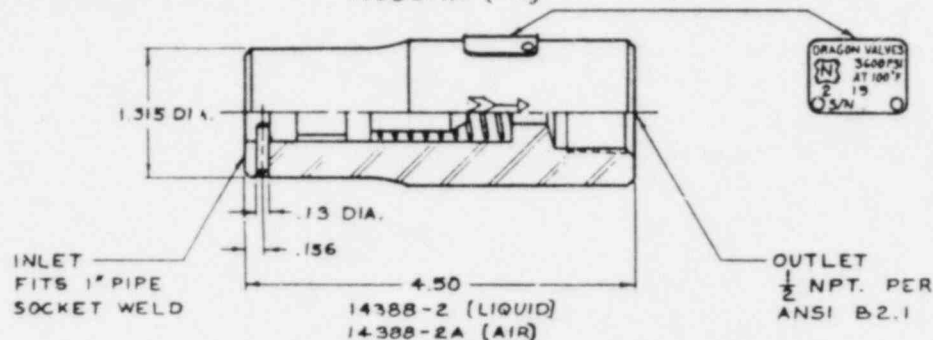
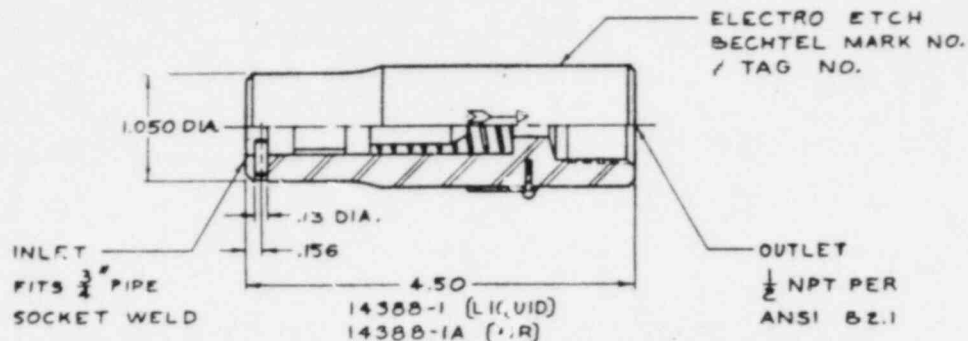
Encls.

cc: H. C. Bond, Pres., DVI, w/o encls.
R. E. Bond, Vice Pres., DVI, w/o encls.
W. G. Bingham, Bechtel LAPD, w/o encls.

REVISIONS		14388
LTR	DESCRIPTION	DATE
A	EO. 81041	6-1-81

SPECIFICATIONS

1. CODE: ASME SECTION III, CLASS 2
1977 ED., 5'77 ADD.
2. PRESSURE CLASS: 1500
3. OPERATING PRESSURE / TEMP.:
3600 PSIG AT 100°F
4. SERVICE:
-1, -2, -3; WATER, OIL / STEAM
-1A, -2A, -3A; AIR
5. RESETTING ORIFICE: TABULATED
6. CLOSING FLOW: TABULATED
7. PART NUMBER: TABULATED



14388-3A	14406	1.5 - 3.0 SCFM	.020 MAX.	10.0
14388-3	14405	.5 - .7 GPM	.040 MAX.	
14388-2A	14404	1.5 - 3.0 SCFM	.020 MAX.	2.7
14388-2	14403	.5 - .7 GPM	.040 MAX.	
14388-1A	14402	1.5 - 3.0 SCFM	.020 MAX.	2.0
14388-1	14401	.5 - .7 GPM	.040 MAX.	
PART NUMBER	PARTS LIST	SHUT OFF FLOW	RESETTING ORIFICE DIA. (IN.)	EST. WGT. LBS.

1. ▲ DENOTES PRESSURE RETAINING PARTS
NOTES:

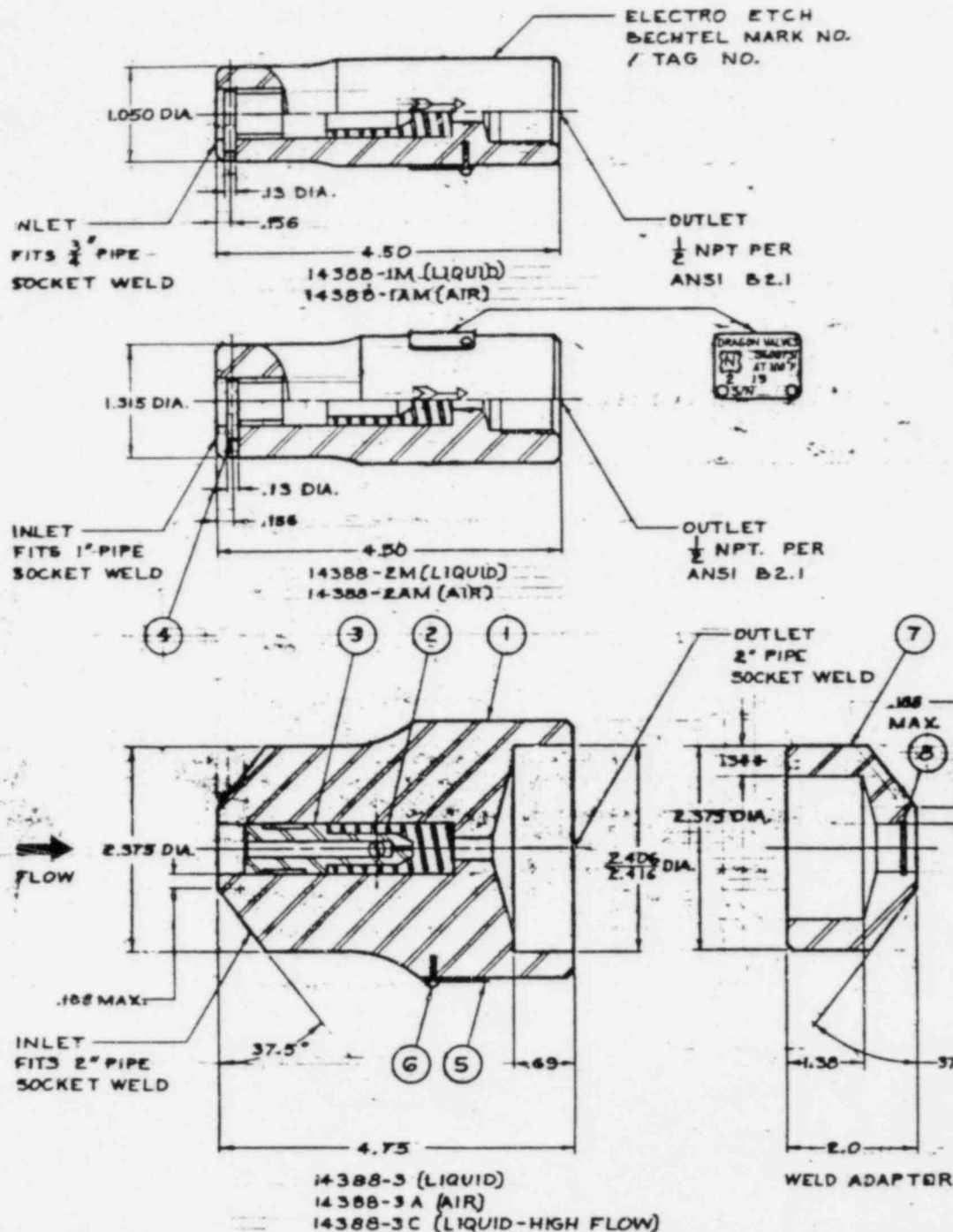
ITEM	QTY.	PART NAME	MATERIAL SPECIFICATIONS
6	2	DRIVE SCREW	STAINLESS STEEL 300 SERIES
5	1	NAME PLATE	STAINLESS STEEL 300 SERIES
4	1	RETAINER PIN	STAINLESS STEEL 300 SERIES
▲ 3	1	POPPET	STAINLESS STEEL ASME SA479 TY 316
2	1	SPRING	STAINLESS STEEL 300 SERIES
▲ 1	1	BODY	STAINLESS STEEL ASME SA182 GR F 316

PARTS LIST

ARIZONA PUBLIC SERVICE COMPANY
PALO VERDE NUCLEAR GENERATING STATION
UNITS 1, 2, / 3
BECHTEL P.O. 10407-13-JM-705

UNLESS OTHERWISE SPECIFIED	DR CONOVER 4-15-81	APPRO 4/14/81	EXCESS FLOW CHECK VALVE
DRAWINGS ARE IN INCHES TOLERANCES ON ANGLES ± 1/2° DIMENSIONS ± .005 ± .010	CHG 4-29-81	APPRO	AUTOMATIC RESET
CONCENTRICITIES .010 T.I.R. ALL DRILL POINTS 180°-110° BREAK SHARP EDGES .005-.020 FILLET RADIUS .005 THREADS PER ANSI B1.1	TAB.	WGT	1500 LB NUCLEAR
SURFACE ROUGHNESS PER ANSI B46.1	SCALE NONE	WGT TAB. LB	SIZE CODE IDENT. NO DWG NO.
			C 97399 14388
			N30108 A SHEET 1 OF 1

OBSOLETE



SPECIFICATIONS

1. CODE: ASME SECTION III, CLASS 2 1977 ED., 5'77 ADD.
2. PRESSURE CLASS: 1500
3. OPERATING PRESSURE / TEMP: 3600 PSIG AT 100°F
4. SERVICE:
 - 1, -2, -3, -3C; WATER, OIL / STEAM
 - 1A, -2A, -3A; AIR
5. RESETTING DRIFICE: TABULATED
6. CLOSING FLOW: TABULATED
7. PART NUMBER: TABULATED

REVISIONS		14388
LTR	DESCRIPTION	DATE
A	E.O. 81041	6-1-81
B	E.O. 81079	11-12-81
C	E.O. 82006	2-4-82
D	E.O. 82046	10-2-82

PART NUMBER	PARTS LIST	SHUT OFF FLOW	RESETTING DRIFICE DIA. [IN]	EST. WGT. LBS.
14388-3C	14G22	3.6-4.0 GPM	.040 MAX.	10.0
14388-3A	14406	1.5-3.0 SCFM	.020 MAX.	
14388-3	14405	.5-.7 GPM	.040 MAX.	
14388-2AM	14404	1.5-3.0 SCFM	.020 MAX.	2.7
14388-2M	14403	.5-.7 GPM	.040 MAX.	
14388-1AM	14402	1.5-3.0 SCFM	.020 MAX.	2.0
14388-1M	14401	.5-.7 GPM	.040 MAX.	

2. ■ DENOTES EXCESS FLOW CHECK VALVE REQUIRING WELD ADAPTER. WELD ADAPTER TO BE FIELD WELDED TO VALVE BY CUSTOMER.

1. ▲ DENOTES PRESSURE RETAINING PARTS.

NOTES:

ITEM	QTY.	PART NAME	MATERIAL SPECIFICATIONS
1	1	RETAINER RING	STAINLESS STEEL PH 15-7 MO
2	1	WELD ADAPTER	STAINLESS STEEL ASME SA182 GR F316
3	2	DRIVE SCREW	STAINLESS STEEL 300 SERIES
4	1	NAME PLATE	STAINLESS STEEL 300 SERIES
5	1	RETAINER PIN	STAINLESS STEEL 300 SERIES
6	1	POPPET	STAINLESS STEEL ASME SA479 TY 316
7	1	SPRING	STAINLESS STEEL 300 SERIES
8	1	BODY	STAINLESS STEEL ASME SA182 GR F316

PARTS LIST

ARIZONA PUBLIC SERVICE COMPANY
PALO VERDE NUCLEAR GENERATING STATION
UNITS 1, 2, 3
BECHTEL P.O. 10407-13-JM-705

UNLESS OTHERWISE SPECIFIED	OR CONVER 4-15-81	APPRO 4-15-81	EXCESS FLOW CHECK VALVE
DIMENSIONS ARE IN INCHES	OR CONVER 4-15-81	APPRO 4-15-81	AUTOMATIC RESET
TOLERANCES ON ANGLES ± 1/2°	OR CONVER 4-15-81	APPRO 4-15-81	1500 LB NUCLEAR
DECIMALS .01 ± .001 .005 ± .001	OR CONVER 4-15-81	APPRO 4-15-81	
CONCENTRICITIES DIA TIA	OR CONVER 4-15-81	APPRO 4-15-81	
ALL DRILL POINTS 180°-150°	OR CONVER 4-15-81	APPRO 4-15-81	
BREAK SHARP EDGES .005-.008	OR CONVER 4-15-81	APPRO 4-15-81	
PLUG BUSH .005	OR CONVER 4-15-81	APPRO 4-15-81	
FINISH PER ASME B1.1	OR CONVER 4-15-81	APPRO 4-15-81	
SURFACE ROUGHNESS PER ASME B46.1	OR CONVER 4-15-81	APPRO 4-15-81	
SCALE NONE	OR CONVER 4-15-81	APPRO 4-15-81	
THIS DRAWING AND INFORMATION PROPERTY OF AND UNAUTHORIZED REPRODUCTION PROHIBITED BY	OR CONVER 4-15-81	APPRO 4-15-81	
DRAGON VALVE, INC.	OR CONVER 4-15-81	APPRO 4-15-81	
ROCKFORD, CALIF 95060	OR CONVER 4-15-81	APPRO 4-15-81	
SIZE CODE IDENT. NO. CHG NO.	OR CONVER 4-15-81	APPRO 4-15-81	
C A 97399	OR CONVER 4-15-81	APPRO 4-15-81	
N30108 A	OR CONVER 4-15-81	APPRO 4-15-81	

T. Norbut

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85036

December 7, 1982
ANPP-22459-GHD/BSK

U. S. Nuclear Regulatory Commission
Region V
Creskide Oaks Office Park
1450 Maria Lane - Suite 210
Walnut Creek, California 94596-5368

Attention: Mr. D. M. Sternberg, Chief
Reactor Projects Branch 1

Subject: Final Report - DER 82-48
A 50.55(e) Reportable Condition Relating to
Dragon Valve Company Instrument Line Check Valves
Seized Open by Welding Heat
File: 32-019-026
D.4.33.2

Reference: (A) Telephone Conversation between T. Young and
G. Duckworth on September 1, 1982
(B) ANPP-21927, dated September 30, 1982 (Interim Report)

Dear Sir:

Attached, is our final written report of the reportable deficiency, under
the requirements of 10CFR50.55(e).

Very truly yours,

E. E. Van Brunt

E. E. Van Brunt, Jr.
APS Vice President
Nuclear Projects Management
ANPP Project Director

EEVBJr/GHD:db

Enclosure

cc: See Attached Page 2

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U. S. Nuclear Regulatory Commission
Attention: Mr. D. M. Sternberg, Chief
Page 2

December 7, 1982
ANPP-22459-GHD/BSK

cc: Richard DeYoung, Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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D. B. Fasnacht
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J. R. Bynum
A. C. Rogers
B. S. Kaplan
W. E. Ide
J. Vorees
J. A. Brand
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Lynne Bernabei, Esq.
Harmon & Weiss
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Washington, D. C. 20006

R. L. Greenfield
Assistant Attorney General
Bataan Memorial Building
Santa Fe, New Mexico 87503

FINAL REPORT - DER 82-48
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNIT 1

I. DESCRIPTION OF DEFICIENCY

An installation problem has been encountered with the Excess Flow Check Valves supplied by Dragon Valve Company (PVNGS specification 13-JM-705). Thermal expansion and distortion of the valve body in the heat affected zone during welding assembly with the piping systems causes the poppet to seize in the open position.

II. ANALYSIS OF SAFETY IMPLICATION

This condition is evaluated as Reportable. The condition precludes the device from performing its intended function of preventing loss of fluid in the event of instrument tubing rupture or loss of pressure down stream of the check valve. Should the condition remain uncorrected, and in the event of a tubing rupture, the defect would result in release of radioactive fluids which could present a substantial safety hazard.

III. CORRECTIVE ACTION

The movable internal poppet for the excess flow check valve has been redesigned by the vendor to preclude binding as a result of welding the valve in place.

Nonconformance Report PX-4379 will be dispositioned to test and/or rework all the subject flow check valves delivered to the jobsite. Valves failing an operational test, or not tested, will be reworked by installing the redesigned poppet. The vendor will provide corrected valves for Units 2 and 3 to preclude recurrence of this problem at PVNGS.

In addition to reportability under 10CFR50.55(e), PVNGS Project considers the deficiency to be Reportable under the requirements of 10CFR Part 21 by the supplier. This Deficiency Evaluation Report (82-43) addresses the reporting requirements specified under 10CFR 21.21.(b) (3) with the exception of sub-part (vi) which requires the number and location (customers and/or facilities) of other possibly defective equipment. A copy of this report has been sent to Dragon Valve Company requesting their review for reporting under 10CFR Part 21, including number and location of all components supplied.

PART 21 REPORT LOG SHEET

1. Subject of Report - Dragon Vales Inc, Check Valve Poppets
2. Date Verbal Notification Received - _____ Received By - _____
3. Date Information Placed in Daily Report - _____
4. Name and Address of Person Providing Verbal Notification
 - a) Name - G. Duckworth
 - b) Company and Address - Arizona Public Service Inc
P.O. Box 21666 Phoenix Ariz 85036
 - c) Telephone No. - (602) 943-7200 (x6020)
5. Description of Problem - Welding Valves to piping during
installation causes poppet valve to seize. Dragon
Valve Model No. 14388
6. Nuclear Facilities Affected - Palo Verde Units 1, 2, 3 only
7. Date 5-day Written Report Due - N/A Date Received - 12/15/82
8. Mail Written Report to HQ's and Other Affected Regions
 - a) Date Mailed to HQ's (Bill Mills) - _____
 - b) Date Mailed to Other Regions - N/A Regions Mailed To - None
9. Give Written Report to Each Region V Affected Principal Inspector
 - a) Date Given to Principal Inspector(s) - 12/15/82
 - b) Name(s) of Inspectors Given To - P. Narbut
10. Additional Comments - Dragon Valve Pt 21 attached
DVNGS 50.55(e) on same subject attached
Item will be carried as 50.55(e), by the region
The Part 21 is considered closed