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FACIL:STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528
AUTH.NAME AUTHOR AFFILIATION
VAN BRUNT,E.E. Arizona Public Service Co.
RECIP.NAME RECIPIENT AFFILIATION
SPENCER,G.S. Region 5, San Francisco, Reactor Construction & Engineer

SUBJECT: Final deficiency rept re cracked turnbuckle assembly rods supplied for control room lighting suspension sys,intially reported in P Norbut 810325 telcon,Rods returned to manufacturer for disposal.

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TITLE: Construction Deficiency Report (10CFR50.55E)

NOTES:Standardized Plant.1 cy:C Grimes 05000528

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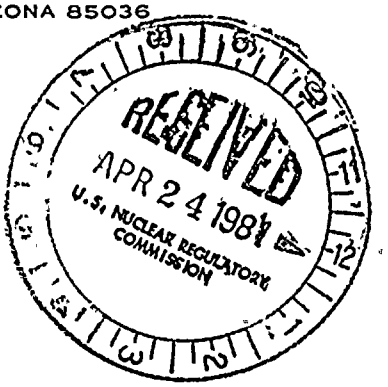
ARIZONA PUBLIC SERVICE COMPANY
P. O. BOX 21666 · PHOENIX, ARIZONA 85036

April 15, 1981
ANPP-17786-BSK/JAR



U. S. Nuclear Regulatory Commission
Region V
Walnut Creek Plaza - Suite 202
1990 North California Boulevard
Walnut Creek, California 94596

Attention: Mr. G. S. Spencer, Chief
Reactor Construction and Engineering Support Branch

Subject: Final Report
A 50.55(e) Reportable Condition Relating to Cracked Turn-buckle Assemblies Supplied for the Suspension System for the Control Room Lighting
File: 81-019-026; D.4.33.2

Reference: Telephone Conversation between P. Norbut and B. S. Kaplan on March 25, 1981, (DER 81-6)

Dear Sir:

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

Very truly yours,

E. E. Van Brunt, Jr.

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

lb

Attachments

cc: (see attached)

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1/1

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S

cc: Victor Stello, Jr., Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

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FINAL REPORT

REPORTABLE DEFICIENCY 50.55(e)

ARIZONA PUBLIC SERVICE COMPANY (APS)

PVNGS UNIT 1

I. Description of Deficiency

Cracks were discovered in the 90° bends of the 1/4" diameter threaded, steel rods which are part of the hanging system hardware for the lighting fixtures of the control room ceiling supplied by the Day-Brite Lighting Division of Emerson Electric Co., Tupelo, Mississippi. These rods (Item 15 B77X141) are used to provide lateral support to the light fixtures and are an integral part of the ceiling support system. The cracks originated at the manufacturer's shop due to improper cold bending of the rods. Cracks were not detected by the supplier prior to delivery; however, the deficiency was discovered by Bechtel Construction prior to installation. Eighty-four (84) pieces were found with cracks at the bend out of a total of one hundred and forty-six (146) pieces received for Unit 1 ceiling.

The rods are an integral part of the ceiling support system. Four rods are used in combination with turn buckles, clevises, and vertical hanging rods to provide the hanging system for each light fixture. This support system has been qualified under seismic conditions. As such, if any of the defective lateral support rods were to be installed, it could potentially weaken the overall fixture support and may cause the fixture to become disengaged and fall during a seismic event. Other safety features, such as secondary hangers are incorporated into the design to minimize this eventuality, however, the defective rods represent a condition which has not been analyzed and which has not been qualified by testing.

II. Analysis of Safety Implication

This condition is considered reportable under the requirements of 10CFR50.55(e) since if left uncorrected the failure of the control room lighting fixture support system, as indicated above, could possibly cause failure or loss of safety related control room functions.

APS has no knowledge of any of these components that may have been supplied to other facilities.

III. Corrective Action

The defective rods have been returned to the manufacturer for disposal and

III. Corrective Action (continued)

all other rods included in this shipment will be disposed of at the jobsite. New rods will be made using improved manufacturing techniques to preclude recurrence of this deficiency (see attached letter, Day-Brite to Bechtel Power Corporation dated 3/25/81). Also a Bechtel Supplier Quality Representative will be assigned to this order to provide additional surveillance prior to reshipment of the rods.

Attachment to DER 81-6

DAY-BRITE

March 25,1981

Bechtel Power Corporation
P.O. Box 60860 Terminal Annex
Los Angeles, California 90060

Attention: William Currlin

RE: Arizona Nuclear Power Project
Bechtel Job 10407
Purchase Order 10407-13-AM-216
1/4-20 Threaded Rod with 90 degree bend for Control Room Ceiling

Dear Bill:

The subject rod when used as part of the diagonal brace from near the top of the module gussett plat to the Grinnel strap at the beam is heated (annealed) and put in a die for 90 degree bending.

After the rod has been bent it is plated.

Stress testing on a random selection basis occurs twice, after bending and after plating. The minimum failure has occurred at 1300 Ft. lbs.

A visual inspection for cracks is made on each rod prior to plating.

Yours truly,

Robert Mosier

Robert Mosier
Technical Marketing Manager

EMERSON

RM:pm

DAY-BRITE LIGHTING DIVISION
EMERSON ELECTRIC CO
1015 S GREEN ST
P O DRAWER 1688
TUPELO MISSISSIPPI 38801

cc: S. Ryan
T. Halfaker

OD38RMB