

Arizona Public Service Company

P.O. BOX 21666 • PHOENIX, ARIZONA 85038

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May 24, 1983

ANPP-23867-BSK/RQT

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

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

Subject: Interim Report - DER 83-15
A 50.55(e) Potentially Reportable Deficiency Relating to
A354 Anchor Bolt From Marathon Broke Under Installation Torque
After Test Acceptance
File: 83-019-026; D.4.33.2

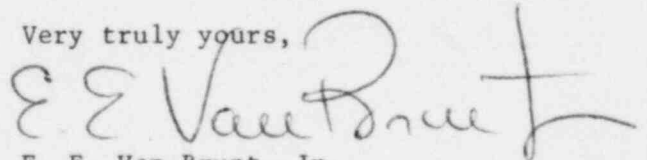
Reference: Telephone Conversation between P. Narbut and R. Tucker on
March 18, 1983

Dear Sir:

The NRC was notified of a potentially reportable deficiency in the
referenced telephone conversation. At that time, it was estimated that a
determination of reportability would be made within thirty (30) days.

Due to the extensive investigation and evaluation required, an Interim
Report is attached. It is now expected that this information will be
finalized by July 21, 1983, at which time a complete report will be
submitted.

Very truly yours,



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

EEVB/RQT:db

Attachment

cc: See Page 2

U. S. Nuclear Regulatory Commission
Page 2

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

T. G. Woods, Jr.
G. C. Andognini
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D. R. Hawkinson
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G. A. Fiorelli

Records Center
Institute of Nuclear Power Operations
1100 Circle 75 Parkway - Suite 1500
Atlanta, Georgia 30339

INTERIM REPORT - DER 83-15
POTENTIAL REPORTABLE DEFICIENCY
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNIT 2

I. POTENTIAL PROBLEM

During verification of installation torque of Column 9 anchor studs in Unit 2 Containment Building, a 1" diameter ASTM A354 Grade BD anchor stud supplied by Marathon Steel broke in the threaded portion (Drawing 13-C-ZCS-620 embed no. 322, bolt D). The stud has a documented EQUOTIP Hardness of L=578(Rockwell C=31) and the specified installation torque is 1,071 ft.-lbs.

A complete failure analysis was performed on the broken portion of the subject stud by Bechtel's Material and Quality Services (M&QS) Department. Based upon the results of this analysis, it has been determined that (see M&QS Technical Report No. 0383-03 FA, BLN No. 283-13, dated March, 1983): 1) the stud's chemical content and hardness are consistent with the requirements of ASTM A354 Grade BD; 2) the stud had an acceptable quenched and tempered microstructure; 3) it experienced a torsional failure due to ductile shear overload

The report concludes that the anchor stud was overtorqued.

An engineering review of this condition has limited the problem to the identified Column 9 embedded studs as follows:

- a) There is evidence of overtorquing on other studs which secure Column 9.
- b) The other identical installations (Column 10 of Unit 2 and Columns 9 and 10 of Unit 3) have been verified to be torqued to the specified values with no problems.
- c) The torque wrench used for this particular installation has been checked and found to be within calibration requirements.

II. APPROACH TO AND STATUS OF PROPOSED RESOLUTION

Column 9 serves as a pipe whip restraint in the event of a Main Steam System break. Should the subject condition remain uncorrected, Column 9 could potentially be unable to perform this safety-related function.

Bechtel Engineering is currently finalizing an alternate column base anchoring detail which will utilize side straps and core-drilled through-bolts in lieu of the embedded anchor studs. NCR CC-3993 will be dispositioned to repair the defect by installing this alternate anchoring detail.

III. PROJECTED COMPLETION OF CORRECTIVE ACTION
AND SUBMITTAL OF THE FINAL REPORT

Evaluation of this condition and submittal of the Final Report is forecast to be completed by July 21, 1983.

Bechtel Group, Inc.

Interoffice Memorandum

To R. A. Keidel

File No. GRS-033-09

Subject Failure Analysis of an
ASTM A-354 Bolt
Palo Verde Project
Job No. 10407-002

Date March 17, 1983

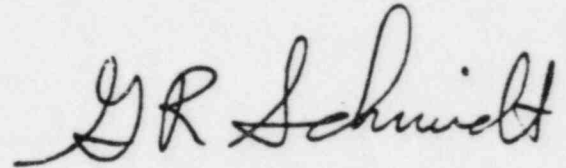
From G. R. Schmidt

Copies to R. A. Manley/B. D. Hackney (6)
N. H. Evans
C. Dunn
DCC 131177/Proj. File
J. E. Drennan/BLN-283-13-SF
BLN-283-13-WC

Of R&E/Materials & Quality
Services Department

At WC/EI/A4 Ext. 930-2408

Transmitted with this IOM are six copies of a report covering our examination of a fractured bolt.



G. R. Schmidt

GRS/JCG/nlj

Attachment