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 AUTH. NAME: CURTIS, N.W. AUTHOR AFFILIATION: Pennsylvania Power & Light Co.
 RECIP. NAME: GRIER, B.H. RECIPIENT AFFILIATION: Region 1, Philadelphia, Office of the Director

SUBJECT: Final deficiency rept re: Anchor-Darling valve yoke cracking, initially reported on 800707. Anchor-Darling replacing affected parts w/priority given to Unit 1. Replacement scheduled for completion by May 1981.

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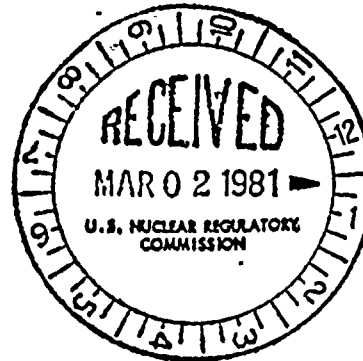
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NORMAN W. CURTIS
Vice President-Engineering & Construction-Nuclear
770-5381

February 26, 1981

Mr. Boyce H. Grier
Director, Region I
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406



SUSQUEHANNA STEAM ELECTRIC STATION
FINAL REPORT OF A DEFICIENCY
RELATING TO ANCHOR-DARLING VALVE YOKES
ER's 100450/100508 FILE 840-4/900-10
PLA-641

References: PLA-505 dated July 7, 1980
 PLA-511 dated July 21, 1980
 PLA-551 dated October 2, 1980

Dear Mr. Grier:

This letter serves to provide the Commission with a final report relative to a deficiency involving cracked yokes on Anchor-Darling valves. The condition was originally reported in PLA-505 and the information contained herein is submitted as a final report pursuant to the provisions of 10 CFR 50.55(e).

The attachment to this letter contains a description of the problem, its cause, an analysis of safety implications and the corrective action planned.

We trust the Commission will find the information forwarded by this letter to be satisfactory.

Very truly yours,

A handwritten signature in cursive that reads "NW Curtis".

N. W. Curtis
Vice President-Engineering & Construction-Nuclear

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PENNSYLVANIA POWER & LIGHT COMPANY

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Mr. Boyce H. Grier

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February 26, 1981

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Attachment

cc: Mr. Victor Stello (15)
Director-Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. G. McDonald, Director ✓
Office of Management Information & Program Control .
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. Robert M. Gallo
U. S. Nuclear Regulatory Commission
P.O. Box 52
Shickshinny, PA 18655

SUBJECT

Cracked yokes on Anchor-Darling Valves.

DESCRIPTION OF PROBLEM

A discrepant condition was noted on Valve LF034D during functional testing of the RHR system by the Integrated Startup Group and was documented on NCR 5980.

The condition observed on the subject valve involved the formation of large cracks in the four radii at the yoke mounting flange/yoke vertical section interface. (See Figure 1 attached.)

This same condition was later noted on Valve LF034C, although the degree of cracking was not as severe. These valves were purchased under Purchase Order 8856-P-12A, from Anchor-Darling.

CAUSE

The valve supplier (Anchor-Darling Valve Co.) has examined one of the cracked yokes and determined that the cause of failure was a materials problem. The Bechtel Materials and Quality Services (MQS) group verified the Anchor-Darling findings. All yokes found cracked were furnished by a common sub-supplier, Malcolm Co. Inc., for the Anchor-Darling valves.

As the valve yokes are non-pressure boundary parts, no material traceability is required. An investigation to determine the cause of the problem with Malcolm Co. castings is not possible due to the fact that Malcolm went out of business shortly after producing the yokes provided for SSES valves.

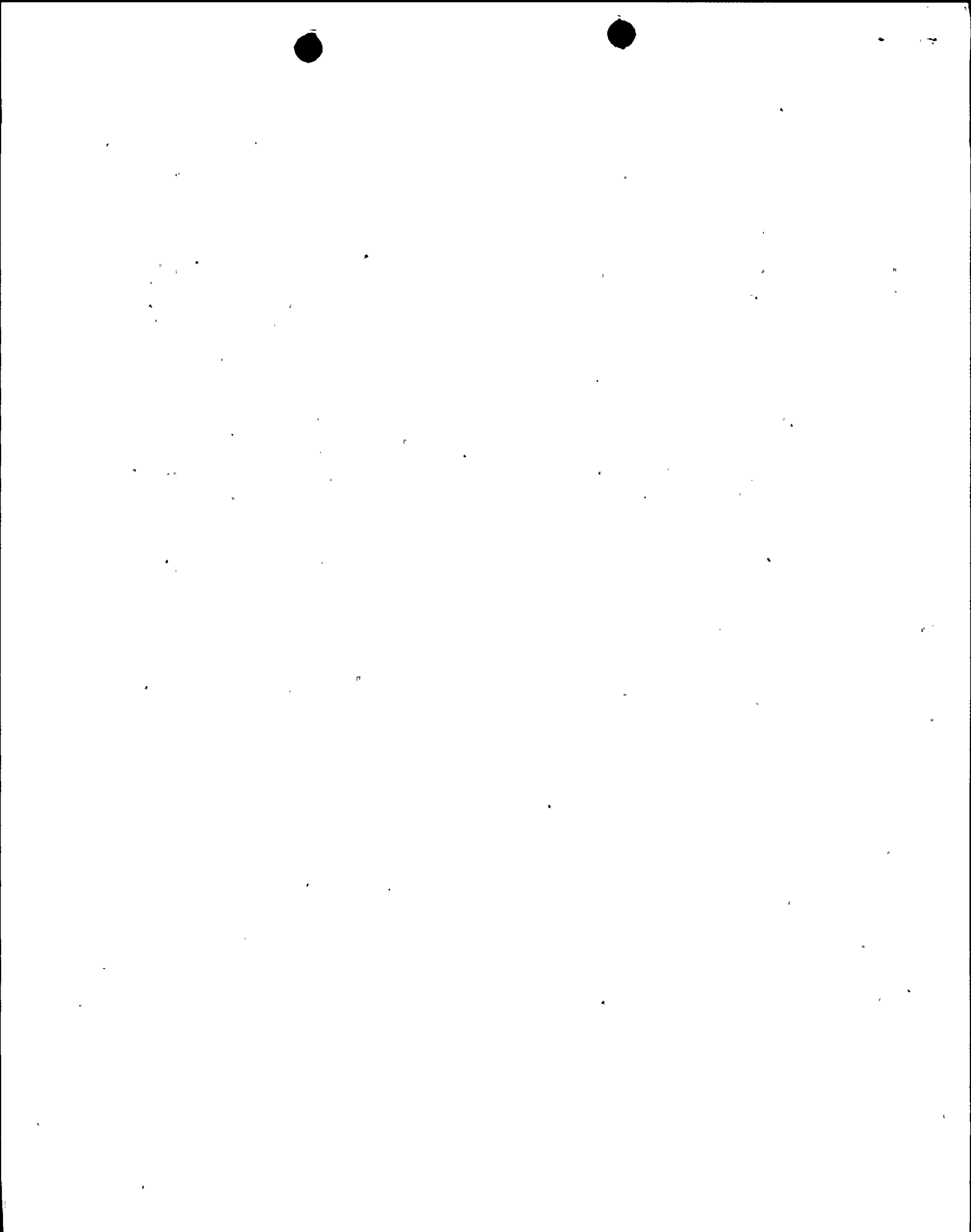
ANALYSIS OF SAFETY IMPLICATIONS

The Anchor-Darling records indicate that a total of one hundred fifty-six (156) suspect yokes were supplied by Malcolm for SSES purchased valves. The valves were supplied on Purchase Orders 8856-P10A, P12A and P17A. One hundred fourteen (114) of these are on active valves.

Anchor-Darling performed hardness tests on all affected yokes to determine the tensile strength of the material. Thirty five (35) yokes exhibited hardness greater than the maximum of ASTM-A-216-WCB (the specified material), forty three (43) exhibited hardness less than the minimum required and seventy-eight (78) were within the allowable range.

A sample yoke was taken from each group (low hardness, high hardness, medium hardness), and was tested destructively (chemical and physical tests). The results of these tests demonstrated that none of the material was WCB and was not suitable for valve yokes.

In addition to the above valve yokes, two additional items, important to valve function, were discovered to have been supplied by Malcolm. These are a disc skirt for a 6" globe (6-EBA-GB-MO-F102-P; 1 for each unit, total 2 valves) and a disc skirt nut for a 24" globe (24-GBB-GBY-MO-F048A, B; 2 for each unit, total 4 valves).



Based on the fact that the material is not suitable and the fact that its use on active valves would cause loss of valve function, this problem is reportable under 10 CFR 50.55(e).

CORRECTIVE ACTION

Bechtel's MSQs took corrective action by evaluating all yokes furnished by Anchor-Darling for the Susquehanna Project. Since all discrepant yokes were furnished by the sub-supplier, Malcolm Co., Inc., who is now out of business, Anchor-Darling could take no further corrective action with that source. All yokes and other items important to valve function, including the replacement yokes, will in the future, be purchased from a supplier which has proven ability to provide the specified material.

Anchor-Darling is proceeding to replace all of the affected parts with priority being given to Unit 1 first and Unit 2 last. The replacement of the yokes and the disc skirt and disc skirt nut will be covered under Non-Conformance Report No. 5980. The replacement is scheduled to be completed by May 1981.

CONCLUSION

Replacement of the deficient parts with material from a qualified supplier will enable the valves to perform their intended function.

Figure 1 to
PLA-641

