



WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 1223 • Elma, Washington 98541-1223 • (206) 482-4428

June 10, 1991
G03-91-082

Docket No. 50-508

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Mail Station P1-137
Washington, D. C. 20555

Subject: NUCLEAR PROJECT NO. 3
POTENTIAL 10CFR50.55(E) DEFICIENCY
WESTINGHOUSE POWER CENTER DRY TYPE
TRANSFORMER INSULATOR CRACKING

On May 13, 1991, the Supply System notified your office of a potential 10CFR50.55(e) deficiency concerning the subject condition. Attached is a Supply System Interim Report. The report provides a description of the deficiency, corrective actions taken/planned, and the current status.

To-date, the Supply System does not have sufficient information to fully determine reportability under 10CFR50.55(e). In addition, while it is known that this same type of transformer has been supplied to other projects, the generic significance has not been determined. This written report is being submitted pursuant to earlier oral notification. If our evaluations determine that the subject condition is reportable, the Supply System will submit the appropriate report to describe the plan of corrective action. As our investigation continues, if significant new information is developed, Interim Reports may be filed prior to the determination of final reportability.

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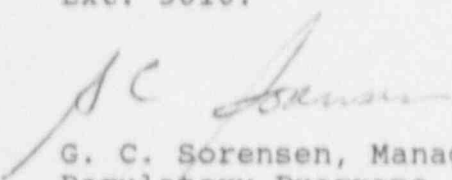
U. S. Nuclear Regulatory Commission

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POTENTIAL 10CFR50.55(E) DEFICIENCY

WESTINGHOUSE POWER CENTER DRY TYPE TRANSFORMER INSULATOR CRACKING

Should you have any questions or desire further information, please contact Mr. C. M. Butros, WNP-3/5 Site Manager at (206) 482-4428, Ext. 5010.



G. C. Sorensen, Manager
Regulatory Programs

WKD/cae

cc: Mr. R. G. Bailey, Puget Sound Power & Light Co.
Mr. W. L. Bryan, Washington Water Power Co.
Mr. R. E. Dyer, Portland General Electric Co.
Mr. J. R. Lewis, BPA
Mr. T. A. Lockhart, Pacific Power & Light Co.
Ms. R. M. Taylor, Ebasco - Elma
Ebasco - New York
Mr. J. B. Martin, U. S. NRC, Region V Administrator
Mr. N. S. Reynolds, Winston & Strawn

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

WNP-3

INTERIM REPORT

WESTINGHOUSE POWER CENTER
DRY TYPE TRANSFORMER INSULATOR CRACKING

(CONTRACT NO. 3240-48)

DEVIATION/NONCOMPLIANCE NO. 067

Prepared by: C G Reid *CR*

Date: June 5, 1991

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 3
INTERIM REPORT

Westinghouse Power Center Dry Type Transformer Insulator Cracking
Deviation/Noncompliance No. 67

Introduction

This Interim Report is submitted pursuant to the requirements of 10CFR50.55(e). It concerns the discovery of cracked coil support insulators in Class IE and Non Class IE dry type power center transformers supplied to WNP-3 by Westinghouse Electric Corporation. Preliminary assessment indicates that the cracking is caused by stress placed on the insulators as a result of their off center positioning between the pressure plate and the transformer coil. The compressive forces that hold the transformer coils in position act through these insulators. The cracked insulators have been found in both energized transformers and ones which have never been energized.

The transformers are type ASL Core Form Power Center Transformers, rated between 750KVA and 2666KVA, with primary voltage of either 13.8KV or 4.16KV and secondary voltage of 480V.

This deficiency has been designated as potentially reportable since the determination of significance could not be completed within 14 days of QA notification as required by procedure. Significance and reportability will be decided and a Final Report submitted when information is received from the manufacturer and significance can be determined. On May 13, 1991, Lewis Miller of the Region V Office was notified of this problem by telecon.

Description of Problem

In September 1987, an insulator that supports the C-phase coil of a Westinghouse supplied (Contract 3240-48) dry type air ventilated 2000KVA Non Class IE transformer (A22-NA) was discovered to be cracked and this problem was documented on a work request. Then in January 1990, three (3) cracked insulators were discovered in Non Class IE transformer A21-NA purchased under the same contract. The latter discovery resulted in an engineering inspection of transformers A21-NA and A22-NA. The inspection confirmed the insulator cracking and also identified the off-center positioning of the insulators between the coil and the pressure plate. Preliminary assessments indicated that the cracks resulted from the stress caused by the compressive force acting through the side of each insulator (see Sketch A). Both these transformers were energized prior to the discovery of the cracked insulators. As a result of this discovery, a letter was sent to Westinghouse in February 1990 notifying them of the problem and requesting their technical assistance.

Description of Problem (Cont'd)

Due to the above, Engineering initiated an additional work request to open the Plant's six (6) Class IE power center transformers, purchased under the same contract, for inspection. The transformers, which have not yet been energized, were inspected in November 1990. This inspection found that the Class IE transformers had the same off center positioning of the insulators between the transformer coil and the pressure plate. In addition, cracked insulators were found in two of the six transformers (A33-SA and B33-SB). Westinghouse was advised of this subsequent discovery. No information or assistance was provided by them and on April 11, 1991, NCR 15525 was initiated to document and track resolution of the problem and the open work requests were closed. The problem was deemed potentially significant since it is unknown at this time what effect the insulator's off center position and subsequent cracking would have on the Class IE qualification of the transformers. This evaluation will begin when information requested from Westinghouse, in our letter of April 30, 1991 and earlier correspondence referenced therein, is received.

Corrective Action

The Project has tracked this problem from an isolated finding to what appears to be a generic problem. After it was determined that the problem affected our Class IE transformers, NCR 15525 was written to document the deficiency and track resolution. As part of the NCR's interim disposition and evaluation, the finding was deemed potentially significant since the potential for common mode failure exists and potentially reportable to the NRC under 10CFR50.55(e) as required by Procedure C3-N-23WP when significance could not be evaluated within 14 days. When the requested technical information is received from Westinghouse, significance will be determined and a final disposition will be made on the NCR to resolve this problem.

Current Status

The Project formally notified Westinghouse Electric Corporation on April 30, 1991 that this problem affects our Class IE transformers as well as the Non Class IE transformers and asked for technical assistance to evaluate it. We also informed Westinghouse that we would be reporting this problem to the NRC under 10CFR50.55(e) and requested they evaluate the need for a 10CFR Part 21 Report since the defect appeared generic to the product and the Project has no schedule for resolution at this time. The Project has not yet received a response from Westinghouse.

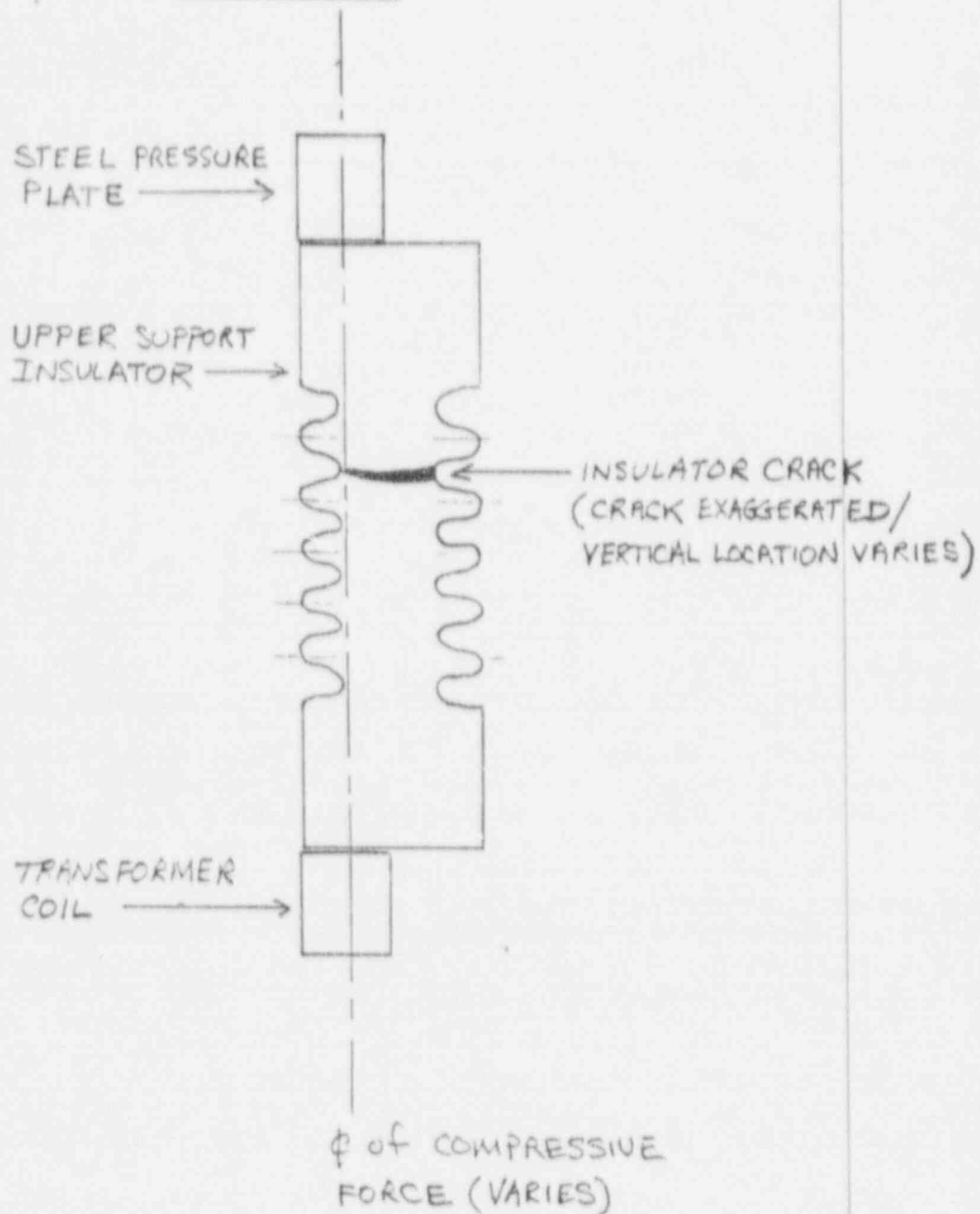
Final Report

Due to the currently undefined schedule for Westinghouse technical input and Preservation Period limitations that prevent Supply System resolution of this issue without vendor input, the schedule for issuance of a Final Report can not be determined. Additional Interim Reports will be filed if significant new information develops.

DEVIATION/NONCOMPLIANCE NO.67

WESTINGHOUSE POWER CENTER DRY TYPE TRANSFORMER
INSULATOR CRACKING

SKETCH A





WASHINGTON PUBLIC POWER

SUPPLY SYSTEM

INTEROFFICE MEMORANDUM

E3-JLP-91-060

DISTRIBUTION: MAIL DROP:

DATE: June 5, 1991
TO: C. M. Butros, WNP-3/5 Site Manager (760)
FROM: J. L. Perreault, WNP-3 Technical Mgr. (751) *JLP*
SUBJECT: DELEGATION OF AUTHORITY

REFERENCE:

JP Cooper	775
BJ Crow	772
WK Drinkard	701
LA Hill	772
RJ Marzano	752
CG Reid	714
JW Rett	757
RM Taylor	705
ADMIN FILE	060
WNP-3 FILE	703
JLP/lb	751
DIC 20.3	

Mr. C. M. Butros will have delegation for the duties of the WNP-3 Technical Manager during my absence June 6, 1991 and June 7, 1991.

Mr. Butros will have full responsibility of this position except for personnel matters and salary action.

/cae