

yellow

Virginia Electric and Power Company
ATTN: Mr. W. L. Stewart, Vice President
Nuclear Operations
P. O. Box 26666
Richmond, VA 23261

Gentlemen:

Subject: Meeting Summary - Docket Nos. 50-338 and 50-339 - North Anna 1 & 2

This refers to a management meeting conducted at our request in the Region II office on November 29, 1982, with you, your consultants, and the Region II staff. This meeting was held to discuss results of the investigation by VEPCO of the series of main transformer failures at North Anna.

It is our opinion that this meeting was beneficial and has provided a better understanding of the causes and preventive actions for main transformer failure. In accordance with Section 2.790 of NRC's "Rules of Practice", Title 10, Code of Federal Regulations, a copy of this letter will be placed in the NRC's Public Document Room.

Should you have any questions concerning this matter, we will be pleased to discuss them.

Sincerely,

James P. O'Reilly
Regional Administrator

Enclosure: Meeting Summary

cc w/encl:
J. H. Ferguson, Executive
Vice President

bcc w/encl:
NRC Resident Inspector
Document Management Branch
Commonwealth of Virginia

RII
CAJuMan:gr
11/ /82
12/6/82

RII
HCDance
11/ /82

RII
RCLewis
12/8/82

Enclosure

Meeting Summary

1. Attendees:

Virginia Electric and Power Company (VEPCO)

W. L. Stewart, Vice President, Nuclear Operations
E. R. Smith Jr., Director, Safety Evaluation and Control
E. W. Harrell, Assistant Station Manager, North Anna
H. L. Sutton, Superintendent, Electrical Equipment
O. Compton, Electrical Systems Coordinator

Westinghouse

H. R. Moore, Westinghouse Transformer Division

Nuclear Regulatory Commission

R. C. Lewis, Director, Division of Project and Resident Programs
H. C. Dance, Chief, Project Branch 2, DPRP
A. R. Herdt, Chief, Engineering Inspection Branch, Division
of Engineering and Technical Programs
R. A. Clark, Chief, ORB #3, NRR
T. E. Conlon, Chief, Plant Systems Section, ETP
C. A. Julian, Chief, Project Section 2C, DPRP
L. Engle, Licensing Project Manager, NRR
M. Chiramal, Analysis and Evaluation of Operational Data, NRC
K. Jenison, Project Inspector, NRC
K. D. Landis, Project Inspector, NRC
C. R. McFarland, Electrical QA Inspector
W. H. Miller Jr., Fire Protection Engineer
A. B. Ruff, Electrical Inspector

2. Discussion Topics

NRC representatives expressed their concern over the repeated failure of the main transformers at North Anna. VEPCO representatives presented the results of their extensive investigations into the causes of the six main 500 kVA transformer failures at North Anna since plant startup. There was a mutual discussion by the attendees of the causes and possible preventive actions for these failures. Five of the failures occurred on Unit 2 and the most recent one was on Unit 1. There were various causes including bushing failures due to improper storage and transportation, a broken bolt within a bushing and nitrogen bubbles coming out of solution in the oil thereby reducing the dielectric strength of the oil.

VEPCO representatives stated, in addition to improved testing and inspection, various measures have been taken to prevent recurrence. Procedures for storage, handling and transportation of the bushings have been modified to

ensure that the capacitor paper remains oil soaked. The vertical "chimney" shield within the bushing has been found to be unnecessary and removed from the Unit 1 bushings. A modification has been installed on the Unit 1 transformers to incorporate a diaphragm interface between the oil and the nitrogen cover gas. Special procedures have been incorporated for refilling the transformers with oil and for cold weather startup to avoid nitrogen bubbles coming out of solution. Longer term replacement of this model transformer is under consideration. The manufacturer representative present indicated a service letter was to be issued within two weeks, providing information and recommendations on this problem.