

JAN 7 1983

*Docket File  
DES MS-014*

Docket Nos. 50-338  
and 50-339

Mr. W. L. Stewart  
Vice President-Nuclear Operations  
Virginia Electric and Power Company  
Post Office Box 26666  
Richmond, Virginia 23261

Dear Mr. Stewart:

SUBJECT: NORTH ANNA POWER STATION (NAPS)/RECURRING MAIN TRANSFORMER  
FAULTS.

As you are aware, we have been closely monitoring the recurring transformer faults at NAPS since the third failure which occurred at NA-2 on July 3, 1981. While some of the failure modes involving the first six failures may have been identified at this time, the latest failure that occurred at NA-1 on December 5, 1982 resulting in damage to the iso-phase bus, main generator windings, and the generator grounding equipment raises questions regarding the adequacy of the existing protection design for the main generator/transformer at NAPS.

In addition, the now seven recurring main transformer failures at NAPS bring forth the following concerns.

1. The design adequacy and availability of the immediate access path required by GDC-17 to the offsite power system at NAPS in which the main transformer has a critical role,
2. The numerous challenges posed by the non-safety part of the plant, i.e., the offsite power system, to the safety system (protection system and the unnecessary reactor trips), and
3. A present unknown failure mode mechanism which may be contributing to the recurring main transformers failures.

On December 9, 1982 NRC representatives met at NAPS to be advised on the latest December 5, 1982 transformer fault. At this site visit, VEPCO representatives were advised that the NRC was forming an independent task force to evaluate this problem of recurring transformer faults. Also, since the site visit, the NRC project manager, Mr. Leon Engle, has advised your staff that the task force was being assembled and that requests for information would be forthcoming.

In view of the above, the task force has requested that the information requested in the enclosure to this letter be provided within thirty (30) days receipt of this letter.

Please call us, should you have any questions regarding the matters discussed above or our request for information as provided in the enclosure.

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PDR ADOCK 05000338  
PDR

Mr. W. L. Stewart

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The information requested in this letter affects fewer than ten respondents; therefore, OMB clearance is not required under P. L. 96-511.

Sincerely,

Original signed by  
Robert A. Clark

Robert A. Clark, Chief  
Operating Reactors Branch #3  
Division of Licensing

Enclosure:  
Request for Information

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REQUEST FOR INFORMATION

NORTH ANNA POWER STATION,

UNITS NO. 1 AND NO. 2

DOCKET NOS. 50-338 AND 50-339

1. A detailed description of the protective relaying scheme for the main generator/transformer and protection relay philosophies of VEPCO and how these practices compare with that in vogue in the industry.
2. Station fault current calculations on the 22 kV bus developed for engineering the protection of main generator/transformer (phase faults, single phase-to-ground fault)
3. Protective relaying schematic diagrams (three lines diagrams) which show the overlapping zones of relay protection for the generator, main stepup transformer and unit station service transformer.
4. A description of the primary and backup relaying and their coordination and operation for various zone faults.
5. Control circuit diagram and operation description of the HV circuit breakers of the main generator transformer, unit station service transformer and generator.
6. Data on time vs current/voltage, if any, recorded during the fault events of December 3-5 at the various locations from the generator through the high side of the main generator transformer bank.
7. A description of the overexcitation protection for the main generator transformer, if any provided.