VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

October 11, 2002

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

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Docket Nos. 50-338
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License Nos. NPF-4
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Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNITS 1 & 2
VENTILATION RADIATION MONITOR SYSTEM
SPECIAL REPORT

On September 29, 2002, Process Vent Radiation Monitor 1-GW-RM-178 (RM) experienced a sample flow fault and the RM was subsequently declared inoperable. Technical Requirement 3.3.7, Radiation Monitoring Instrumentation, Action E.1 requires initiation of a preplanned alternate method of monitoring within 72 hours when a required RM is inoperable. The RM must also be restored to operability within 7 days or submit a Special Report within 7 days. On October 6, 2002, the 7 day allowed outage time for the RM expired without returning the component to service. As such, a special report is required to be submitted in accordance with Technical Requirement 3.3.7, Radiation Monitoring Instrumentation, Action F.1.

During investigation of the sample flow fault, it was found that sections of sample flow tubing on the RM skid were 87 to 89 degrees Fahrenheit (F) when measured with a contact pyrometer. Condensation was found in the sample flow tubing on the RM skid. Condensation in the RM skid tubing is affecting the sample flow elements which have proven to be extremely sensitive to even minute amounts of moisture. Moisture causes the flow elements to indicate a fault condition which in certain cases shuts down the machine. Corrective actions implemented as a result of the root cause evaluation, referenced in Special Report Supplement dated August 22, 2002, replaced heat tracing on sample lines within the station up to the RM skid. This was intended to heat the sample stream high enough to allow the sample to pass through the RM skid tubing without dropping below the dewpoint. The new heat trace installed has not completely prevented condensation in some portions of the RM skid tubing, even though the sample temperature was successfully elevated to the maximum allowable temperature based on the resultant effect on detector temperature. The RM skid tubing is insulated but it does not have heat trace. Recent experience has identified under certain conditions ambient temperatures allow portions of the RM skid tubing to cool to a temperature close to or below the dew point of the sample. In the near term, we are

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evaluating erecting a temporary enclosure to maintain consistent ambient temperatures around the RM skid tubing. Monitoring the enclosure and RM skid tubing temperatures will improve our ability to prevent unwanted condensation from occurring in the machine. When consistent temperature control is achieved, the RM will be declared operable and returned to service. Long term actions include evaluating installing a permanent enclosure and/or installing heat trace on the RM skid tubing.

As part of the preplanned alternate method of monitoring while 1-GW-RM-178 is out of service the normal range Westinghouse monitor remains in service, as does the high range Nuclear Research Corporation monitor, which can be used in either MIDAS or emergency procedures to perform dose projection. The results of these projections can be used to classify an event in accordance with the Emergency Action Levels described in the station Emergency Plan procedures. Grab sample capability on the Process Vent will also be maintained so that supporting sample analysis can be performed.

The Station Nuclear Safety and Operating Committee has reviewed this report and it will be provided to the Management Safety Review Committee. Should you have any questions regarding this report, please contact us.

Very truly yours,

D. A. Heacock
Site Vice President

Commitments made in this letter: None

cc: U. S. Nuclear Regulatory Commission
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