



CERTIFIED MAIL
RETURN RECEIPT REQUESTED

May 24, 2016

Attn: Joshua Rodriguez
Department of Energy & Environment
Government of the District of Columbia
1200 First Street, NE, 5th floor
Washington, DC 20002

Re: Crystal Substation; Arlington County, VA

Dear Mr. Rodriguez:

On May 2, 2016, Dominion Virginia Power ("Dominion") received your email request for additional information regarding the above-referenced oil spill event. The information below is provided in response to that request. If you have any questions, please contact me at (804) 273-2998 or Jason Ericson at (804) 273-3012.

Sincerely,

A handwritten signature in black ink that reads "Amanda B. Tornabene". The signature is fluid and cursive, with the first name "Amanda" being more prominent.

Amanda B. Tornabene
Director, Energy Infrastructure Environmental Services

cc: Randy Chapman; randy.chapman@deq.virginia.gov

INFORMATION REQUESTED

- 1. Transformer failed on January 24th at 7:54am; How was DVP notified of the failure and what time was DVP first responders on-site to deploy counter measures?**

A remote alarm signaled an electrical problem with the transformer on January 24, 2016 at 0754 hrs. Dominion dispatched local Substation personnel to respond to the alarm. Dominion personnel arrived at the Substation location at 0852 hrs. Upon gaining access (approximately two feet of snow blocked the Substation gate) to the Substation and ensuring the facility was electrically safe, personnel evaluated the status of the equipment onsite and the nature of the transformer failure. Evidence of the catastrophic failure of the transformer and the spill was discovered at approximately 1000 hrs. Reagan National Airport recorded 17.8" of snow January 22-23.

- 2. Was the Arlington Fire Department notified?**

The Arlington County Police and Fire were notified in the late afternoon on January 24th through the non-emergency phone number by Andrew Molinares, Supervisor Dominion Regional Operations Center. The operator receiving the notification from Dominion was "Jackie372".

- 3. Were any regional or local emergency personnel notified immediately following the incident?**

The Virginia Department of Emergency Management (VDEM) was notified in the late afternoon on January 24th through the operations center phone number by Andrew Molinares, Supervisor Dominion Regional Operations Center.

- 4. Why was there a 5 hour delay in notification to VADEQ?**

Mark Miller, Virginia DEQ (VADEQ) PREP coordinator was notified at approximately 1300 hrs on January 24th. Operations staff accessed the Substation as discussed above and notified Dominion Environmental personnel of the status of the equipment. Due to the significant snow on the ground, the extent of mineral oil that had been released was not immediately evident. Dominion Environmental personnel arrived onsite approximately 1300 hrs and notified VADEQ following confirmation that mineral oil had been released and was outside of containment.

- 5. The adjacent stormwater inlet was inaccessible until January 25th because of the recent snowfall and plowing activities; were any photos collected of the condition of the inlet, were there any observations documented when the inlet was first accessed?**

The stormwater inlet and the manhole cover were covered by plowed snow. The area was accessed at approximately 1100 hrs on January 25th. Photo 1 in Attachment 1 shows the condition of the stormwater inlet when it was accessed. Hand written notes from when the storm water inlet was accessed at approximately 1100 hrs indicated that no evidence of oil was observed. Storm inlets at Fern and 15th, Hayes and Fern and the manhole at the apartment complex immediately across Fern from the substation were also checked by Dominion personnel on January 25th, and no oil was observed at these locations.

On the morning of January 26th, the storm water inlet outside the Station was observed by

Charles Fitzsimmons (EPA Region III) and Dominion personnel. A water sample was collected at that time and showed no visual evidence of mineral oil. A photo (Photo 2) of a water sample collected by Dominion personnel later that afternoon at 1648 hrs at the stormwater inlet immediately outside the station showed no visual signs of oil.

- 6. On January 27th DVP and Arlington County inspect inlets for oil; which inlets were inspected? Are there any documented observations of these inspections? Are there any photographs of these inspections?**

On January 27th Charles Fitzsimmons (EPA) and Dominion staff observed the storm water inlet immediately outside the substation at approximately 0830 hrs and no evidence of mineral oil was observed. At approximately 1100 hrs the stormwater inlet was again observed by Dominion staff along with Mark Miller (VADEQ). At that time, emulsified oil was observed behind absorbent boom that had been placed in the inlet. Following the observation of oil in the storm drain, Dominion staff (John DiCarlo), Mark Wisdom (Arlington County Stormwater Specialist) and Mark Miller (VADEQ) investigated stormwater inlets/manholes between the Crystal substation and Roaches Run. The inlets investigated were selected by Arlington County staff based on plans of the storm sewer pathway that leads from the Substation (Attachment 2). No evidence of oil was observed at any inlet other than the inlet immediately outside of the Substation. Dominion does not have photographs of the inspections of the inlets.

- 7. The abatement report claims 11,120 gallons of free product was recovered from the damaged transformer, vault system and other areas of the substation. No manifests or support are included in the report to confirm this volume. How was this volume determined? Where are the manifests for the recovery of the free product?**

The estimated 11,120 gallons of free product was recovered from the vault system, other areas of the station and the main compartment of the damaged transformer. An additional approximately 750 gallons of mineral oil was recovered from the Load Tap Changer and Selector compartments of the transformer. In total approximately 11,870 gallons were recovered.

During the initial response, the volume of mineral oil removed was approximated by either using tank gauging charts for the vacuum trucks collecting free product in full loads or by measuring the depth of oil in the various impacted vaults with a graduated rod commonly used in the petroleum industry for measuring fuel volumes in smaller tanks. A water sensing paste was used to differentiate between the oil and water layers in each vault prior to being periodically pumped out. A calculation based on the approximated square foot area of each vault times the inches of oil in the vault was used to determine the approximate cubic feet of oil removed. The cubic feet of oil removed was then converted to gallons. This method of determining daily removal volumes continued until February 9th, when there was no longer any measurable layer of free product being recovered. Volumes of oil removed during each pumping event were recorded in handwritten notes by Dominion personnel on-site observing the operation. An example photograph of oil in the vaults is provided in Attachment 1 (Photo 3).

The manifests for the oil and water removed from the substation are included in the Initial Abatement Report included with the Site Assessment Work Plan (SAWP) submitted on April 18, 2016. The volumes noted on these manifests are the total volume of water and oil removed and are not an indication of the volume of oil removed. The volume of oil removed was calculated as discussed above and documented in field notes.

8. There are major discrepancies between the time the oil and oily waste was recovered or collected and the time the manifests were signed for disposal/storage. What is the reasoning behind the delay for signature?

Due to site constraints which do not allow for large storage tanks, all oil and water from the site was pumped to tank trucks and transported to HEPACO's facility in Fredericksburg, Virginia for temporary storage and analytical testing. Additionally, all soils and gravel from the site were taken to the HEPACO facility in Fredericksburg. Following completion of analytical analysis, all materials removed from the site were taken to the RECO facility in Richmond, Virginia for final disposal. The difference between the time the material left the Crystal Substation and the time it reached the final disposal location is a result of the temporary storage of the material at the HEPACO facility in Fredericksburg.

A revised version of the Initial Abatement Report was included with the Site Assessment Work Plan (SAWP) submitted to VADEQ on April 18, 2016. The revised Initial Abatement Report includes updated documents to reflect final disposal locations.

9. How was the oil fraction calculated from the solid waste/oil mixtures.

In addition to the free product collected by vacuum truck, there was additional oil entrained in stone and soil within the Substation that was removed by excavation or vacuum extraction and oil collected by sorbents deployed during the spill response. A total of approximately 32 tons of #3 stone saturated with oil and 197 tons of soil impacted with oil were removed. The amount of product recovered with the heavily saturated #3 stone was estimated by assuming that the fist sized stones were saturated with approximately an ounce of oil per stone. We assumed three stone per pound resulting in the collection of an estimated 1,500 gallons of product.

The amount of product collected in the soil onsite was estimated by assuming a contamination level of approximately 8,900 ppm. This assumed concentration was derived by taking the midpoint between the a low range concentration from analytical data of approximately 1,640 ppm and a high range assumption of approximately 16,200 ppm (slightly above the saturation limit). Assuming a concentration of 8,900 ppm yielded approximately 3,506 lbs of oil in the excavated soil. Assuming 7.5 lbs per gallon of oil, we estimated 467 gallons of product in the soil.

Based on these assumptions, the volume of oil removed with these materials was estimated to be approximately 1,967 gallons as reported in the Initial Abatement Report. Using this volume, approximately 3% of the 229 tons of material initially removed was the entrained oil.

10. Are the original photo exhibits available? Those provided in the report are graining and too low resolution to provide any information.

Attachment 1 includes the photographs included in the Initial Abatement Report. If you have an ftp site, we can provide you the electronic files or can send you a CD.

11. When were the outfall and headwall photos taken? There is no snow on the ground depicted in the headwall photo, which would indicate the photo was taken significantly later than the immediate incident date or even on January 28th when the outfall was accessed.

The outfall and headwall photos included in the Initial Abatement Report were taken on January 31st and February 9th, respectively. On January 28, when access was gained to the outfall area, no visible signs of oil were observed (Photo 14). Due to the snow conditions, no observations further downstream could be made. The headwall is located a significant distance downstream from the outfall. We were made aware that the headwall existed and investigated the headwall on February 4th.

12. Finally, although you may have provided a copy of your SPCC plan and/or Emergency Response Plan, we have yet to receive a copy. Please provide a copy of the plan(s).

The Crystal Substation is included in a multi-facility SPCC plan that includes all of Dominion's SPCC Substation facilities in Virginia and North Carolina. Attached are the sections of the multi-facility plan that pertain to the Crystal Substation. Information on the other locations and facilities covered by the SPCC plan have been redacted for security reasons.