Virginia City Hybrid Energy Center
Response to Data Request
Bruce Buckheit, Member, Virginia Air Pollution Control Board

Question (Page No. 7):

Identify current management practices for newly generated coal waste and gob. If they are being properly managed there would not seem to be an environmental benefit to allow Dominion to burn unwashed coal.

Response:

We have answered the request below; however, we note that identification of waste coal management practices is not required as part of air permitting procedures. Waste coal management practices are not regulated by DEQ but by the Virginia Department of Mines, Minerals and Energy, Federal Office of Surface Mining and the Mine Safety and Health Administration. Management practices for waste coal are much better now than they were prior to the Surface Mine Control and Reclamation Act (SMCRA) of 1977. Prior to August 1977, waste coal piles were unregulated and typically placed with no engineering performed to minimized impact. Waste coal is now regulated and managed in engineered fills or surface impoundments designed to minimize the leaching of contaminants into groundwater and surface water. Ash from VCHEC is disposed at a landfill that is lined and regulated as a industrial waste landfill by definition outlined in 9 VAC 20-80-10.

There are many benefits of consuming unwashed coal. By consuming run-of-mine (ROM) coal, the facility will be much more efficient with regard to extracting the maximum amount of carbon from the coal bed. Coal washing sends carbon-containing materials to waste piles, thus wasting carbon. This is particularly true for coal in southwest Virginia where the sulfur is closely bound into the coal and not the pyritic material. While managed in a better manner than prior to SMCRA, coal washing still generates waste coal piles. Due to the fact that coal seams are becoming thinner and thinner, more rock is typically extracted with the coal than in the past.

Coal washing operations generate about equal parts coal and coal waste, i.e. 200 tons of material from a coal mine generates approximately 100 tons of washed coal and 100 tons of coal waste. Moreover, about 15 to 20 percent of the carbon ends up in the gob pile. In addition, washing coal uses energy and causes the coal to be handled twice (trucking from the mine to the coal preparation plant, then to the site rather than from the mine to the site). The idea that burning washed coal generates less waste is flawed. The waste is either generated prior to combustion and sent to a coal waste site or during combustion and the coal combustion byproducts (CCB) are sent to an on-site ash disposal area or

beneficially re-used. Because the CCB is cementatious in nature, contaminants are encapsulated.

It can be argued that burning ROM coal generates less waste than burning washed coal as consuming the ROM coal removes all of the carbon from the coal bed. Consumption of unwashed coal provides many environmental advantages.

Even within the current regulatory framework for waste coal disposal, while minimizing environmental issues, environmental issues can still occur. Waste coal disposal sites created from the washing of coals with high pyritic sulfur content both in the coal and in the overburden, interburden and underburden rock have greater potential to produce acid mine drainage runoff that must be treated prior to discharge. Likewise, waste coal disposal sites can have alkaline conditions that could leach certain metals at pH 9 and above.

Current performance standards require waste coal sites to be reclaimed (covered with inert material, i.e. soil) and establishing vegetation. Once it has been demonstrated for a 5 year period that the site has been reclaimed to the appropriate regulatory standards, permit liability for the site is released. In most cases, there are no future environmental issues from these waste coal disposal sites. There have been cases where established drainage control has failed resulting in erosion contributing to the sediment loading of receiving streams. In addition, lightning strikes and forest fires have ignited theses waste coal sites resulting in uncontrolled air emissions.

A cornerstone principal to keep in mind is waste minimization and then disposing of the waste in an environmentally protective manner. Waste coal sites are not required to have protective liners nor leachate collection systems as compared to the proposed coal combustion byproduct landfill. We strongly believe burning ROM coal and managing the resulting waste in a protected, lined landfill is more environmentally protective than using washed coal where the waste coal is managed to a different criteria.