

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:

AES Sparrows Point LNG, LCC and
Mid-Atlantic Express, LLC
Docket Nos. CP07-62-000 and
CP07-63-000
§375.308(x)

March 16, 2007

Mr. Christopher Diez
AES Sparrows Point LNG, LCC and
Mid-Atlantic Express, LLC
140 Professional Parkway, Suite A
Lockport, NY 14094

RE: Environmental information request for the AES Sparrows Point Project

Dear Mr. Diez:

Thank you for providing Environmental Resource Reports for the proposed AES Sparrows Point LNG Terminal and Mid-Atlantic Express Pipeline (Sparrows Point Project) with your application, filed January 8, 2007. Based on the Federal Energy Regulatory Commission (Commission) staff's review of the resource reports and the matrices of responses to previous comments, we have identified several issues requiring clarification or additional information to complete preparation of the draft environmental impact statement (EIS).

Further, to address information needs identified by the U.S. Coast Guard for inclusion in our draft EIS, please provide the information described in the enclosure to assist in our analysis of the above-referenced application for the Sparrows Point Project. This information is necessary in order for the staff of the Federal Energy Regulatory Commission to complete the draft EIS; therefore, we cannot issue a Notice of Schedule for Environmental Review until this information is received.

Please provide the information described in the enclosure to assist in our analysis of the above-referenced certificate application. File your response in accordance with the provisions of the Commission's Rules of Practice and Procedure. In particular, 18 CFR 385.2010 (Rule 2010) requires that you serve a copy of the response to each person whose name appears on the official service list for this proceeding.

Please file a complete response within 20 days of the date of this letter. Send your response to:

Philis J. Posey, Acting Secretary
Federal Energy Regulatory Commission
888 First St. NE; Room 1A
Washington, DC 20426

If certain information cannot be provided within this time frame, please indicate which items would be delayed, and their projected filing dates. **Failure to file timely, accurate, and complete responses will only delay the processing of this application.**

Some of the missing issues may require considerable Commission staff review in order to proceed with our environmental analysis. File all responses under oath (18 CFR 385.2005) by an authorized representative of AES or Mid-Atlantic Express and include the name, position, and telephone number of the respondent to each item.

When filing documents and maps, be sure to prepare separate volumes, as outlined in **“How-to File Non-Internet Public, CEII or Privileged Material.”** This document is available on the Commission’s web site at <http://www.ferc.gov/help/how-to/file-material.asp>.

For all materials submitted, please provide one electronic copy directly to me. Also provide electronic and hard copies directly to the Commission’s third-party environmental contractor, Richard Yuill at AMEC.

Thank you for your cooperation. If you have any questions, please call Joanne Wachholder at 202-502-8056.

Sincerely,

Richard R. Hoffmann, Director
Division of Gas – Environment and
Engineering
Office of Energy Projects

cc: Public File, Docket Nos. CP07-62-000 and CP07-63-000

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ENVIRONMENTAL INFORMATION REQUEST AES Sparrows Point Project

General Comments

- 1) The imagery for the photo alignment sheets is too blurry to be useful. Provide photo alignments with better resolution.
- 2) AES states in various portions of the Application that the design basis for the gas send out is 1.5 billion cubic feet of gas per day (Bcf/d). Explain if this is the nominal daily send out capacity or the maximum daily capacity. If 1.5 Bcf/d is the baseload case, provide the maximum send out capacity (without expansion).
- 3) Provide copies of any discussions with company representatives concerning the using of the existing third-party pipeline permanent right-of-way as construction workspace. Discuss any limitations on the use of this existing right-of-way and any required modification of construction techniques because of the existing pipelines.

Project Description

- 1) In section 1.5.1.3, paragraph H.4 Access Roads, you state that "In some instances, improvements [to existing access roads] will be necessary (e.g., widening and reinforcing)." Provide a revised Table 8.3.5-1 that includes a column indicating, for each access road, what improvements will be necessary, and the status of surveys for cultural resources or documentation that the proposed upgrades would not affect cultural resources.
- 2) Identify the location of any communication towers, cathodic protection beds, and remote blow downs. At the LNG terminal site, identify any new structures or equipment (e.g. communication tower) whose height will exceed 150 feet above grade.
- 3) Identify the mileposts (MPs) for each of the typical construction right-of-way diagrams in Appendix 2B. Provide a table of construction methods by MP which references the diagrams in Appendix 2B.
- 4) Describe how the Pier 1 pilings would be repaired if necessary.
- 5) When will AES decide on whether the power plant would be constructed?
- 6) Provide a copy of AES's response to the Maryland Department of Natural Resources (MDNR) letter of November 15, 2006 (MDNR's Data Request #2) as referenced in Appendix 1C in the Dredging Management Plan –Correspondence.
- 7) Describe at approximately what point in the LNG ship's incoming journey a harbor or channel pilot would take command of the vessel. Also describe where and when tugs would be used to assist the LNG ship's approach and departure from the LNG marine terminal.

- 8) Describe the expected annual number of LNG vessel transits, vessel transit speeds in territorial waters to the mouth of the Chesapeake Bay, in Chesapeake Bay ship channel, and in Brewerton ship channel, and approximate length of time of transit within each of the aforementioned zones.

U.S. Coast Guard Request

- 1) Provide:
- a. a color navigational map(s), in 8-inch by 11-inch format, that shows the entire LNG vessel transit route from the outer limit of the United States (U.S.) territorial sea to the proposed LNG terminal location and adjacent shorelines;
 - b. a graphic overlay on the LNG vessel transit map illustrating the following “Zones of Concern”¹ from the center of the vessel route to each shoreline:
 - (1) zone 1: heat flux of 37.5 kilowatt (kW)/per square meter (m²) produced by a pool fire - extending out to about 500 m (0.3 mile [mi]) from the channel;
 - (2) zone 2: heat flux of 5 kW/m² produced by a pool fire - extending out to about 1,600 m (1 mi) from the channel; and
 - (3) zone 3: a flash fire from a vapor cloud - extending out as far as 3,500 m (2.2 mi) from the channel.
 - c. On the vessel transit map, where applicable and feasible, indicate the locations of the following sensitive environmental sites/areas:
 - (1) population density (as defined in enclosure 2 of NVIC 05-05);
 - (2) critical infrastructure (i.e., nuclear power plants, refineries, major bridges and tunnels, major ports or industrial areas of importance);
 - (3) wild and scenic rivers;
 - (4) shellfish nurseries;
 - (5) critical habitat, migration routes, feeding/breeding grounds of federally endangered or threatened species;
 - (6) critical habitat, migration routes, feeding/breeding grounds of state endangered or threatened species;
 - (7) migration routes, major feeding/breeding grounds for marine mammals;
 - (8) wetland areas;
 - (9) marine sanctuaries;
 - (10) wildlife refuges/sanctuaries;
 - (11) migratory bird feeding/breeding grounds;
 - (12) state and National Parks;

¹The “Zones of Concern” are described in Enclosure 11 of the U.S. Coast Guard’s Navigation and Vessel Inspection Circular (NVIC) 05-05. These zones are based on the report *Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water*, December 2004 (SAND2004-6258) prepared by Sandia National Laboratories. If use of larger-sized LNG vessels (greater than 148,000 cubic meter cargo capacity) is anticipated, please use zones resulting from an analysis of larger-sized vessels based on a methodology approved by the U.S. Coast Guard.

- (13) tribal lands/tribal fishing areas (treaty rights fishing areas);
- (14) coral reefs;
- (15) marine protected areas;
- (16) essential fish habitats; and
- (17) any other natural area or wildlife species protected by environmental law or Executive Order or designated environmentally sensitive by an environmental agency of the federal, state, or local government.

If more than one map is necessary, all maps should contain vessel transit route with appropriate “Zones of Concern” overlays.

One possible starting point for this information is the Environmental Sensitivity Index maps maintained by the U.S. Department of Commerce National Oceanic and Atmospheric Administration website.

- 2) Provide diagrams, including a cross-section of an LNG ship showing:
 - a. LNG cargo tanks and double hull structures;
 - b. dimensions of vessel and vessel draft; and
 - c. location of ballast tanks.

- 3) Provide a written description of the entire LNG vessel transit route from the outer limit of the U.S. territorial sea to the proposed location for the LNG terminal, including adjacent shorelines, discussing the existing human, aquatic, and terrestrial resources that may be impacted by LNG vessel transit or an ignited or unignited LNG spill (appropriate impact levels based on Sandia’s “Zones of Concern” should be used). A higher level of resource description should be provided for environmentally sensitive areas, while a more general discussion of non-sensitive resources along the route is acceptable. If the LNG vessel transit route or a portion of the route is so far from the shoreline that shoreline habitats will not be impacted, then a statement to this effect can be made and justified and a detailed analysis of the shoreline need not take place. However, an explanation of why LNG ship steorage problems would not result in impacts to the shore should be provided (i.e., waterway is too shallow to allow for the vessel to come into damaging proximity to shore). Similarly, for aquatic, air, and other resources, if they would not be affected, a statement to that effect along with a short explanation will suffice. Describe the affected environment for the following applicable aspects of the waterway/shoreline:
 - a. sensitive soils and the potential for LNG ship transit to cause shoreline erosion;
 - b. water quality (based on U.S. Environmental Protection Agency water quality database of coastal waters);
 - c. any wild and scenic rivers per Wild and Scenic Rivers Act;
 - d. wetland areas;
 - e. density and character of marine traffic on the waterway (average number of vessels using the waterway per day and types of vessels) and importance of vessel transit routes to commercial vessels (i.e., economic) and recreational vessels;
 - f. locks, bridges, or other man-made obstructions in the waterway;
 - g. depth of water adjacent to the facility;
 - h. tidal range;

- i. protection from high seas;
 - j. natural hazards including reefs, rocks, and sandbars;
 - k. distance of berthed vessels from the channel and width of channel;
 - l. current safety measures already in place for vessel traffic, and specifically for vessels carrying hazardous cargo;
 - m. any existing maintenance dredging;
 - n. shellfish nurseries;
 - o. federally endangered or threatened species and their critical habitat, migration routes, and feeding/breeding grounds;
 - p. state endangered or threatened species and any critical habitat, migration routes, and feeding/breeding grounds;
 - q. marine mammals, and their migration routes, and major feeding/breeding grounds;
 - r. marine sanctuaries;
 - s. wildlife refuges/sanctuaries;
 - t. migratory bird feeding/breeding grounds;
 - u. coral reefs;
 - v. marine protected areas;
 - w. essential fish habitats;
 - x. other aquatic and terrestrial wildlife along the route (general discussion of non-sensitive wildlife is acceptable);
 - y. any other natural area or wildlife species protected by environmental law or Executive Order or designated environmentally sensitive by an environmental agency of the federal, state, or local government;
 - z. passage through designated coastal zone areas;
 - aa. populated areas (numbers of people should be discussed along with designation of rural or urban population and density of population);
 - bb. any minority or low income populations that might be adversely and disproportionately impacted should be discussed;
 - cc. critical infrastructure (i.e., nuclear power plants, refineries, major bridges and tunnels, major ports or industrial areas of importance);
 - dd. state and National Parks;
 - ee. general description of historic districts and buildings, known archaeological sites and sites that are listed or eligible for listing on the National Register of Historic Places, traditional cultural properties, and any National Historic Landmarks;
 - ff. tribal lands/tribal fishing areas (treaty rights fishing areas);
 - gg. ship emissions and their impact on air quality issues along route, that would trigger permits or require a General Conformity analysis; and
 - hh. noise quality.
- 4) For all of the environmental resources listed above in question 3, discuss the consequences and impacts of LNG ship transit and operation and potential impacts of an ignited or unignited LNG spill from either an accident or intentional attack (using appropriate "Zones of Concern") along the entire LNG vessel transit route. A higher level of impact analysis should be provided for environmentally sensitive areas and a more general discussion of non-sensitive resources along the route is acceptable. As mentioned above, detailed discussions are not necessary if specific resources would not be impacted. For each resource impacted,

state your opinion as to the environmental significance of such impacts before and after mitigation (based on CEQ definition of significance stated at 40 CFR Part 1508.27). In addition to the resources listed above at 3a-hh, be sure to address:

- a. impacts of LNG vessel transit on other marine traffic on waterway both commercial and recreational (time delays, safety issues, any economic impacts);
 - b. impacts of LNG vessel transit on maritime safety issues (i.e., vessel transit during tides, protection from high seas, natural hazards including reefs, rocks, sandbars, and manmade obstructions); and
 - c. effects of project-related dredging on environmental resources and permitting requirements.
- 5) Be prepared to respond to the environmental impacts of each of the conditions that will be outlined in the upcoming Waterway Suitability Report to be issued by the U.S. Coast Guard for the Sparrows Point LNG Project.

Alternatives

- 1) Provide the environmental analysis and AES' conclusions for Variations 3, 4, 10, 20, and 20a.
- 2) How many months per year could alternative gasification method 3 (sea water vaporization) be able to operate without supplemental heat?
- 3) Quantify the amount of turbidity from the proposed and alternative dredging techniques.
- 4) In Table 10.5.2-2, under the column headed by "Consistency of Dredged Material Quality ..." AES states that the proposed innovative reuse disposal method is "Consistent – material of similar chemical quality has been similarly treated and reused in other states/agency jurisdictions." Provide examples or case studies of other locations this method of treatment and reuse has been performed and identify the regulatory entities under whose jurisdiction the work was performed.
- 5) Section 10.6.1 indicates that AES considered alternative final interconnection points south of Eagle, Pennsylvania. Indicate where these interconnection points would be and what additional facilities would be required.
- 6) Section 10.6.2 indicates that the crossing of I-695 would require coordination with Maryland Department of Transportation (MDOT) for safety vehicles to support the crossing activities. How would the construction of the pipeline affect traffic on I-695 and for how long? In addition, any alternative or variation that involves construction on an interstate highway right-of-way should include a discussion of traffic impacts, such as Variation 2A. This discussion should include traffic on the cross roads if on or off ramps are involved.
- 7) Resource Report 10 does not indicate that AES looked at any route alternatives along the northern half of the pipeline route; explain why not.

- 8) The information in table 10.6.4-1 does not necessarily agree with the alignment sheets, the topographic maps or the discussion of the variation. For example, the table shows Variation 1 crossing no wetlands and only 0.05 mile of forest. The aerial map shows about 1 mile of forest is crossed and the text states wetlands are crossed. In addition, the table entry for the proposed route at this location indicated no wetlands are crossed, but the alignment sheet shows at a minimum wetland 47.1WA3 is crossed. The discussion of Variation 5 states that it significantly reduces impacts to waterbodies. Table 10.6.4-1 indicates that both the proposed route and the variation cross the same number of waterbodies. Similar issues were found with other variations. Check all information on table 10.6.4-1 and in the text for accuracy and revise accordingly.
- 9) Provide documentation that demonstrates that AES has responded to alternatives/variations proposed by landowners or other concerned citizens. For example, how would AES address the route variation requested by Saint Anne Community Association in their letter of February 6, 2007, suggesting that the pipeline route deviate to the north of the Saint Anne Community across the Kahl property towards Mine Branch Road? This requested route variation would be between approximately MP 35.75 and MP 36.5, and could be considered a westward extension of the starting point of AES Route Variation 10.
- 10) In Section 10.4.2 of Resource Report 10, AES discusses other existing and proposed pipeline systems as potential alternatives to the proposed Mid-Atlantic Express Pipeline project. AES evaluated whether major west-to-east pipeline systems could provide supplies of natural gas to the Mid-Atlantic region as an alternative to the entire Sparrows Point LNG project, not just as an alternative to the proposed Mid-Atlantic Express Pipeline. Therefore, provide a thorough discussion of the use of other existing or proposed pipelines in the Project area to replace all or part of the Mid-Atlantic Express Pipeline to transport some or all of the gas from the terminal to the target markets. Address the following comments and questions in your discussion.
- a. AES provided a brief statement at the end of Section 10.6.1 that the Columbia Gas system is fully subscribed, so connecting to Columbia Gas just outside of Baltimore would provide insufficient capacity to move the volume from the terminal to market. Yet, in Section 10.4.2.1 AES states that the interconnections near Eagle, Pennsylvania, would provide firm back haul capacity to markets to the south and west. If Columbia Gas is fully subscribed just outside of Baltimore (provide the source of that information), explain how there can then be available capacity some 50 miles downstream (i.e., to the north and east) at Eagle.
 - b. Or, if the plan is to backhaul or displace gas at Eagle, explain why that objective cannot be met by connecting to Columbia Gas near Baltimore instead of at Eagle.
 - c. AES states in Resource Report 1 there is a combined capacity of about 7 bcfd between the three pipelines (i.e., Columbia, Transco, and TETCO) to which Mid-Atlantic Express Pipeline will interconnect. Describe how much of that pipeline capacity is subscribed, and cite the source of that information.
 - d. If the supply of gas to these west-to-east pipelines is expected to decline, as AES states in Section 10.4.2.1, estimate how much capacity will become available on these lines, especially in the Baltimore area, in the near term (i.e., in the first years of operation of the Sparrows Point terminal).

- e. According to Resource Report 1, AES plans interconnect capacities of 0.5 bcf/d to Columbia Gulf and 1.0 bcf/d to Transco. Explain why those interconnections cannot be made in Maryland by constructing approximately the first 40 miles of the Mid-Atlantic Express Pipeline, providing interconnection for the full 1.5 bcf/d throughput capacity of the terminal while eliminating the need for approximately 48 miles of additional new pipeline.
- f. As part of a more complete pipeline system alternatives assessment, also consider the reduction in environmental impacts that would result from looping (rather than replacing or paralleling) either Columbia Gas or Transco downstream of interconnections in Maryland if there is insufficient capacity on those existing pipelines in Maryland.

Geology

- 1) Discuss seismic hazards including:
 - a. Fault rupture
 - b. Liquefaction Analyses
 - c. Lateral Spreading
 - d. Tsunamis
- 2) Provide additional information regarding the following potential geo-hazards:
 - a. The Talbot formation at the LNG site: unconsolidated sand with potential high water table and the subsequent potential for liquefaction; when and how will this issue be addressed during final design?
 - b. The three landslide areas mentioned in section 6.6.3: for each of these areas, provide slope, bedrock, whether any karst exists, and if there are any springs or other saturation down the hillside. Include the measures AES would use to monitor and mitigate landslide hazards during pipeline construction and operation; and
 - c. The area(s) of karst topography crossed by the pipeline: what mitigative measures would AES use before, during and following pipeline construction to minimize potential hazards from sinkhole development?
- 3) Borings were performed by hollow stem auger (HSA) drilling and blow counts from HSA borings were used for liquefaction analyses. Standard Penetration Test (SPT) blow counts below the water table from the HSA borings are generally not reliable and should not be used for liquefaction analyses (Youd, T. L. et al., 2001). Provide liquefaction analyses using the Cone Penetration Test (CPT) converted blow counts. Any additional borings performed for evaluation of the liquefaction potential should be performed by rotary drilling.
- 4) Provide electronic CPT data.
- 5) Section 6.2.1.1, page 21. The report indicates downdrag loads in the range of 750 kip to 900 kip could occur on the piles due to ground settlement under fill loads placed to achieve site grades in the area of Tanks T-201A and T-201B. The foundation plan for the project indicates 1,148 piles 14HP73 steel H-piles are proposed to support the tanks. Provide net pile capacity of 14HP73 piles after consideration of downdrag.

- 6) Show that the currently proposed 1148, 14HP73 piles can safely carry the tank loads plus the anticipated down drag loads for Tanks T-201A and T-201B. If not, revise the pile size, downdrag loads, and number of piles.
- 7) Section 6.2.2.1, page 23. The report indicates downdrag loads in the range of 150 kip to 300 kip could occur on the piles due to ground settlement under fill loads placed to achieve site grades in the area of Tanks T-201C and T-201D. The foundation plan for the project indicates 1148 piles 14HP73 steel H-piles are proposed to support the tanks. Provide net pile capacity of 14HP73 piles after consideration of downdrag.
- 8) Show that the currently proposed 1148, 14HP73 piles can safely carry the tank loads plus the anticipated down drag loads for Tanks T-201C and T-201D. If not, revise the pile size, downdrag loads, and number of piles.
- 9) Provide calculations of settlement of the pile groups under the tank and downdrag loads for Tanks T-201A, T-201B, and T-201C and T-201D.
- 10) Discuss lateral group effects and indicate if group reduction factors (p-multipliers) were used in the LPILE analyses presented in Sections 6.2.1.2 and 6.2.2.2. Provide revised calculations including group effects.
- 11) A large number of existing piles and existing foundations are anticipated to be present in the areas of the proposed tanks. Provide recommendations regarding treatment of existing piles (such as removal or cut off below the pile cap), relocation of the proposed piles where conflicts are identified and minimum spacing between the existing piles and new piles.
- 12) Provide geotechnical calculations to support pile axial and lateral capacity, group effects, group settlement, downdrag loads, liquefaction, slope stability, lateral spreading, etc.
- 13) Provide technical data, supporting documents and justification for site specific recommendations for expected sloshing periods of the tanks. Discuss any differences between the site specific recommendations and the T_L values provided in American Society of Civil Engineers (ASCE) 7-05 and Section of Part I of the Draft Seismic Design Guidelines and Data Submittal Requirements for LNG Facilities Seismic Design Guideline (Draft Seismic Design Guidelines) issued by FERC on January 23, 2007.
- 14) Provide plots and tables of the recommended site specific Operating Basis Earthquake (OBE) and Safe Shutdown Earthquake (SSE) response spectra that demonstrates that they satisfy both Nation Fire Protection Association (NFPA) 59A-2001 and the limitations provided in Part I of the Draft Seismic Design Guidelines.
- 15) Provide a list of all LNG facility structures, components and systems with the proposed assigned seismic category of each item as described in Section 3.6 of Part II of the Draft Seismic Design Guidelines.

- 16) Provide the seismic design criteria and analytical approach for all LNG facility structures, component and systems as described in Section 3.7 of Part II of the Draft Seismic Design Guidelines. Also provide seismic criteria to be used to evaluate and retrofit, where necessary, existing buildings and piers and other existing structures which will form part of the LNG terminal facility.
- 17) Provide:
 - a. proposed foundation concepts for structures, systems and components as described in Section 3.8 of Part II of the Draft Seismic Design Guidelines;
 - b. preliminary design calculations for the LNG tanks and containment structures and their proposed foundations as described in Section 3.9 of Part II of the Draft Seismic Design Guidelines;
 - c. Seismic Specification for procured equipment as described in Section 3.10 of Part II of the Draft Seismic Design Guidelines;
 - d. quality assurance procedures as described in Section 3.11 of Part II of the Draft Seismic Design Guidelines; and
 - e. proposed seismic instrumentation plan as described in Section 3.12 of Part II of the Draft Seismic Design Guidelines.
- 18) Provide a list of references used to develop responses to data requests 1 – 16 above as described in Section 3.13 of Part II of the Draft Seismic Design Guidelines.
- 19) If the liquid level used in conjunction with the determination of seismic design forces and overall freeboard heights is not based on the maximum design liquid level in the LNG tanks, provide a study of LNG Liquid Levels as described in Section 3.15 of Part II of the Draft Seismic Design Guidelines.
- 20) Provide a cross-section through a typical LNG tank to the closest point where the sheetpile wall will be constructed adjacent to the channel. Discuss stability of the wall including any lateral pressures due to liquefaction or lateral spreading.
- 21) For the seismic site response analyses described in Sections 7 and 8 of Appendix F of the Geotechnical Report provided in Report 13, provide the information indicated in item 10 of Section 3.5.1 of Part II of the Draft Seismic Design Guidelines.

Soils and Sediments

- 1) For the hydric soils along the pipeline route, provide milepost and acreage, and provide a summary by county and by state.
- 2) Address the potential risk of storm surge during and following major storms at the LNG terminal site.
- 3) AES predicts potential blasting locations along Baltimore Gas & Electric (BG&E) Powerline (paralleled between MPs 8.0 to 32.5) from MPs 20.5 to 26.8 and 32.2 to 32.5 (areas of shallow bedrock). Has AES consulted with BG&E regarding placement of blasting charges

and potential construction hazards to the powerlines? If not, please do so and file the results of the consultation.

- 4) Section 7.4.1.3 Potential for Shallow Bedrock implies that Table 7.3-1 lists MP locations 20.5 to 83.1 where >25 percent of the soils reported shallow bedrock (less than 5 feet), amounting to 30% of the pipeline route. However, this does not exclude shallow bedrock from occurring at the soils series level along the remaining 70% of the pipeline. This could result in an additional significant amount of the total route that has shallow bedrock. Provide a listing of all shallow bedrock locations at the soil series level by milepost, excluding soft bedrock (severely weathered and unlithified units). This level of detail is needed especially along the BG&E powerline right-of-way.
- 5) In Section 7.4.1.3, AES defines soft bedrock as severely weathered or unlithified. Describe this category in more detail, as well as any other characteristics used to qualify bedrock as soft. Describe what soil characteristics or database information was used to determine which soils were categorized as soft bedrock.
- 6) A portion of the proposed turning basin and LNG dock-side areas were not sampled by the original vibracoring and chemical analysis study. Does AES intend to sample these areas and analyze sediments for potential contaminants? If so, when will this sampling and analysis occur?

Surface Water/Wetlands

- 1) Identify the methods to minimize and/or monitor disturbances to aquatic organisms (fish, turtles, marine mammals) from sheet pile driving referenced in Section 2.4.8.2 and subsequently in Section 3.3.3.1.
- 2) How frequently is maintenance dredging of the channels associated with the terminal anticipated? How much sediment is estimated to be generated? How/where will the spoil from such dredging be disposed of for the life of the project?
- 3) Provide a reference(s) for: Section 2.3.2, regarding the pipeline geology/hydrogeology information; the information/data obtained from EmapPA; and the database search(es) performed by FirstSearchTM (e.g., FirstSearchTM 2006).
- 4) The wells listed in Table 2.3-1 do not indicate the water usage for each of the wells, i.e., private (residential) water supply, public (e.g., municipal), irrigation or agricultural supply, water supply or production wells or if they are groundwater monitoring wells. Provide this information for each listed well.
- 5) Table 2.3-1 reports only one well near MP 80.1, while Section 6.6.4.2 indicates that 3 private water supply wells are near the pipeline route between approximately MP 80 and MP 81. Reconcile this difference. If there are three wells, report the approximate MP and the distance and direction from the pipeline.

- 6) In Section 2.3.3 AES lists the U.S. Environmental Protection Agency (EPA) as the source of information on the Strasburg Landfill and the 68th Street Dump/Industrial Enterprises site. Provide a complete reference.
- 7) Regarding information provided in Appendix 2B, Figure 22: the figure indicates the use of riprap to stabilize stream or river banks, a practice which generally is not acceptable to the U.S. Army Corps of Engineers (COE). Propose other methods of stabilizing stream banks and modify the figure.
- 8) Provide mileposts for the nine wellhead protection areas where the pipeline would cross, as mentioned in Section 2.3.4. Also provide a source/reference for the information from the Maryland Department of the Environment (MDE) regarding these wellhead protection areas.
- 9) The third paragraph of Section 2.4.9.2 and the last paragraph of Section 3.3.1.1 indicate that LNG vessel ballast intakes are "typically" screened, whereas Section 3.6.2 states that "The intake aperture on the ships ... would be outfitted with mesh screens to minimize potential impact to nearby organisms," indicating that intakes on all ships would be screened. Clarify whether or not all vessel ballast intakes would be screened and, if not, why not.
- 10) Regarding Section 2.5.1, indicate how the wetlands/water resources were quantified along the 16.57 miles of right-of-way that were not field surveyed (e.g., aerial photo interpretation, NWI maps).
- 11) Section 2.5.1.3 indicates that Wild Cat Branch within Gunpowder Falls State Park is a nontidal wetland of special state concern (WSSC); however, we cannot find it listed in COMAR 26.23.06.01. Also, identify the second WSSC, its location, and if there a potential impact to this wetland from pipeline construction and/or operations. Provide correspondence from the MDE confirming the delineated boundaries of both of the WSSCs.
- 12) Will the pull-string for the Back River and Susquehanna River horizontal directional drills (HDDs) be confined to the workspaces indicated on the most recent alignment sheets filed with the Commission? If not, provide revised alignment sheets indicating the entire workspace needed for the HDD pull-strings.
- 13) Provide an update on the development of the Wetland Mitigation Plan through consultation with the COE.
- 14) The COE filed a letter with FERC dated February 8, 2007, that provided specific comments on AES's application to the COE. Provide copies of AES's responses to these comments.
- 15) Confirm with the appropriate agency/agencies (such as EPA, COE, or MDE) that the contaminant sampling protocol utilized by AES allowed for an adequate level of analysis for potential contaminants in the proposed dredged areas.

Vegetation and Wildlife

- 1) Has the National Marine Fisheries Service (NMFS) been consulted in the development of the Hydrotesting and Pre-Commissioning Plan provided in Appendix 2F? Consult with the appropriate state and federal agencies to determine any seasonal restrictions that would apply to construction at waterbodies crossed by the project, including HDD crossings. File the results of these consultations with the Secretary.
- 2) Explain the system used to develop the "stream location identification number" for Table 3.3.1-4.
- 3) In Section 3.3.1.1, indicate the proposed/anticipated screening mesh size for: the intake screen for the seawater pump intake structure (paragraph 4); the intake apertures for ballast water intake on the LNG ships (paragraph 8); and the cooling water intakes for LNG ships (paragraph 10).
- 4) In Resource Report 3, Section 3.4.1.3 - Aboveground Facilities states: "Some permanent land use impacts may result but are expected to be minimal and overlap as possible with existing pipeline right-of-way associated with the existing facilities. These areas are necessary for the retention of permanent operational areas resulting from modifications to each aboveground facility following construction." Clarify this. In particular, what are the post-construction modifications to which you refer and what are their impacts on vegetation?
- 5) What is the status of consultations with the MDNR - Forest Service (and any local implementing entities) regarding Maryland Forest Conservation Act (MFCA) requirements? Provide locations (by milepost) where any project activity would be on land subject to existing MFCA easements, and identify the easement holder(s).
- 6) Section 3.6 does not discuss the Maryland darter which occurs in the Deer Creek drainage in Harford County. Discuss this species and potential impacts from the project. If the species habitat is downstream from the pipeline crossing, discuss the mitigation methods to avoid impact to this species.
- 7) The LNG Opposition Team indicated in a comment letter that the National Oceanic and Atmospheric Administration (NOAA) Project 64 – living classroom oyster restoration project is located at Fort Carroll, near the dredging project area. Indicate the distance between proposed project activities (including predicted turbidity plumes from dredging activities) and the oyster restoration project, and provide the status of consultations with NOAA regarding the oyster restoration project at Fort Carroll.

Essential Fish Habitat (EFH)

- 1) Provide information, summarized in tabular form, which lists EFH species, by life stage and with seasonality (if available), for the marine transit of LNG ships through Chesapeake Bay, by 10 x 10 minute quads, as available from NMFS. This summary should cover the area

from the outer limit of the U.S. territorial sea, through the mouth of Chesapeake Bay, all the way up the shipping channel to the proposed Sparrows Point terminal.

Threatened and Endangered Species (T&E)

- 1) Pursuant to NMFS's May 3, 2006 letter to AES, will AES agree to the following:
 - a. A NMFS-approved endangered species observer on the dredge to monitor for listed species.
 - b. Vessel ballast water and terminal hydrostatic test water intakes with 2 mm mesh screens and intake velocities of no greater than 0.5 feet per second.
- 2) Consult with the U.S. Fish and Wildlife Service (FWS) and/or NMFS to determine the need for surveys to evaluate if any of these federally listed species may be affected by the project: bald eagle (*Haliaeetus leucocephalus*), shortnose sturgeon (*Acipenser brevirostrum*), Maryland darter (*Etheostoma sellare*), bog turtle (*Clemmys muhlenbergii*).

If surveys are recommended for any of these species:

- a. Provide a copy of the survey report (and FWS comments on the survey conducted) prepared by qualified biologists using FWS-approved survey methods to determine the presence of the species or suitable habitat in the area affected by the project.
 - b. If the survey has not been done, provide a timetable for completion of the survey and filing of the report.
 - c. The survey report must include the following information:
 - 1) Name(s) and qualifications of person(s) conducting the survey
 - 2) Methods(s) used to conduct the survey
 - 3) Date(s) of the survey
 - 4) Area surveyed (include mileposts)
 - 5) Areas where species or potential habitats occur (including mileposts)
 - 6) Potential impacts, both beneficial and negative, that could result from the construction of the proposed project
 - 7) Proposed mitigation that would substantially minimize or eliminate the potential negative impacts.
- 2) Consult with appropriate state agencies to determine the need for surveys for the following state-listed species: Atlantic sturgeon (*Acipenser oxyrinchus*), logperch (*Percina caprodes*), regal fritillary (*Speyeria idalia*), serpentine aster (*Aster depauperatus*), broad-glumed brome (*Bromus latiglumis*), Hitchcock's sedge (*Carex hitchcockiana*), porcupine sedge (*Carex hystericina*), tufted hairgrass (*Deschampsia cespitosa*), ellisia (*Ellisia nyctelea*), soapwort gentian (*Gentiana saponaria*), hoary frostweed (*Helianthemum bicknellii*), slender blue flag (*Iris prismatica*), umbrella magnolia (*Magnolia tripetala*), stiff cowbane (*Oxypolis rigidior*), forked chickweed (*Paronychia fastigiata* var. *nutallii*), clammyweed (*Polanisia dodecandra*), Seneca snakeroot (*Polygala senega*), Leonard's skullcap (*Scutellaria leonardii*), northern dropseed (*Sporobolus heterolepis*), featherbells (*Stenanthium gramineum*), pencilflower (*Stylosanthes biflora*), fameflower (*Talinum teretifolium*)

- a. If surveys are recommended for any of the above mentioned state-listed species, provide the information as stated above (paragraph c) for federally-listed species;
- b. Discuss the short-term, long-term, and permanent impacts to state- and federally-listed species, and any proposed mitigation measures; and
- c. If located in the construction right-of-way provide a fencing diagram for each state-listed vascular plant species and any other vegetation that will be fenced to inhibit mechanical disturbance.

Land Use, Recreation and Aesthetics

- 1) For access roads and staging areas, provide the temporary and permanent amounts of acreage of land affected by county and by land use category using a format similar to Resource Report 8 Table 8.3.2-1. Acreage affected must be quantified by each land use category (e.g., 0.5 acres forest, 0.5 acres residential; not 1.0 acre of residential/forest).
- 2) For Table 8.3.2-2, add a column giving the need for, or use of, each temporary extra workspace (e.g., topsoil segregation, road crossing, stream crossing, HDD pipe pullback area, pipe bend, etc.).
- 3) Provide the distances from the pipeline route to the planned developments within 0.25 miles (only the direction is currently provided).
- 4) Provide further information regarding the planned developments that are expected to be crossed by the pipeline route. Information that should be provided includes status of development, impact from the pipeline on the planned development, discussions with the owners/developers of these properties, and discussions with Harford County regarding these properties.
- 5) Regarding the Coastal Facilities Review Act (CFRA) application with MDE filed on January 8, 2007, provide any responses to the CFRA application. Discuss if there have been any further discussions or indications from MDE/MDNR regarding whether the project would be in compliance.
- 6) In Table 8.3.2-1:
 - a. Are forested wetlands included under Forest Land or under Wetland Waterbody? If under Wetland/Waterbody, recalculate acreages so that they are included in Forest Land and not in Wetland/Waterbody.
 - b. Are farmed wetlands included under Agricultural Land or under Wetland Waterbody? If under Wetland/Waterbody, recalculate acreages so that they are included in Agricultural Land and not in Wetland/Waterbody.
 - c. Include the above in a revised Table 8.3.2-1 in which there are separate columns for Wetlands and Waterbodies.
 - d. In addition to the revised Table 8.3.2-1, provide updated Tables 8.3.2-2, 8.3.3-1, 8.3.4-1, and 8.3.5-1 if any project modifications have resulted in changed acreages in these tables.

- 7) Does AES plan to use all of the pipeyards/staging areas listed in Table 8.3.4-1, or is this a list of properties being considered, with only a subset ultimately being used? Are the areas for each site being completely used, or is that simply the area of the entire property being considered?
- 8) What is the distance from the construction right-of-way to the Harford County recreational trail project?
- 9) What are the closest public boating access points to the LNG terminal? How many and what are the location of the marinas in the vicinity of the terminal? Provide information on marinas along the transit route up Chesapeake Bay and into Baltimore Harbor. Provide locations and usage information on marinas on Bear Creek.
- 10) Provide a lighting plan for the terminal site. What mitigating measures (e.g., downshielding) will be taken to minimize light pollution impacts to neighboring communities and migrating birds?
- 11) Provide site-specific plans for the crossing of the planned developments listed in table 8.4.2-1. The plans should include a discussion of construction techniques, safety measures during construction, and restoration. Each plan should also include a scaled plot plan showing areas to be disturbed; property lines; and any existing/planned structures, utilities and roads.
- 12) Provide a list, by milepost, of all septic systems/fields crossed. How would AES mitigate for damage to a septic system/field? How would AES determine that a septic system/field has been damaged?
- 13) Does AES propose to cross all septic system/field as a separate spread prior to constructing the main pipeline? If not, how does AES plan to “vary” the pipeline route to avoid septic systems; if boring or redesign of the system is not practicable?
- 14) For any residence within 25 feet of the construction work area, file a site-specific construction plan. The plan should include:
 - a. a description of construction techniques to be used (such as reduced pipeline separation, centerline adjustment, use of stove-pipe or drag-section techniques, working over existing pipelines, pipeline crossover, bore, etc.);
 - b. a dimensioned site plan that shows:
 - 1) the location of the residence including any other permanent structures, water wells and septic fields/systems in relation to the new pipeline and, where appropriate, the existing pipelines;
 - 2) the edge of the construction work area;
 - 3) the edge of the new permanent right-of-way; and
 - 4) other nearby residences, structures, roads, or waterbodies.
 - c. a description of how AES will ensure the trench is not excavated until the pipe is ready for installation and the trench is backfilled immediately after pipe installation; and

- d. evidence of landowner concurrence if the construction work area and fencing will be located within 10 feet of a residence.
- 15) Provide a site-specific plan for the two crossings of Gunpowder Falls State Park. The plan should include a detailed scaled map showing the areas of disturbance, a discussion of construction methods; a plan for keeping the hiking trail open during construction; a revegetation plan, and any proposed mitigation. Include any correspondence with MDNR regarding the construction plan.
- 16) Provide site-specific plans for crossing the Baltimore County Waste Water Treatment Plant and the Chester County Water Authority Waste Water Treatment Plant. Discuss how construction would avoid affecting the operation of these facilities
- 17) Provide copies of correspondence with US Department of Transportation concerning the construction of the pipeline parallel to Interstate 695.
- 18) Provide copies of correspondence with the National Park Service concerning the crossing of the proposed Star-Spangled Banner National Historic Trail. Discuss the impact the pipeline construction and maintenance would have on the proposed trail.
- 19) Provide site-specific plans for the crossings of the Old Maryland and Pennsylvania Trail (MP 31.8), the Brandywine Trail (MP 74.2), and the Mason Dixon Trail (MP 43.9). The plans should include:
 - a. a detailed diagram of the crossing location showing areas to be disturbed, any trail facilities, any roads/utilities/waterbodies;
 - b. construction methods; restoration and revegetation plans;
 - c. proposed mitigation; and
 - d. a discussion of how the trails will be kept open for users and how users would be protected from the construction activities.
- 20) Identify all public interest areas being crossed, including, but not limited to: school property; county, township, town parks; golf courses; ball fields; reservoirs; boat ramps; and other areas where the public may gather. Discuss the impacts to the area, site-specific crossing methods, and mitigation.
- 21) For the list of contaminated sites and land fills in Table 8.5.5-1, discuss each site, identify what contaminants may be present, and indicate the probability of encountering contamination (material, soil, and water) when constructing in the vicinity of these sites. Provide a plan for dealing with contaminated material, unanticipated as well anticipated, discovered during construction.
- 22) Provide a discussion of impacts on other recreational activities, including but not limited to, fishing, boating, bird watching, and hunting from construction and operational activities related to the pipeline and LNG terminal, including dredging and ship transit.

Cultural Resources

- 1) The technical cultural resource reports are incomplete. Key analysis and data are missing. The reports need to be redrafted and resubmitted to the Commission and reviewing agencies. Missing information includes:
 - a. There is no analysis of previous research in spite of 90% of the current project having been subjected to previous survey. Sites defined by previous investigations and relocated in the right-of-way are not identified (neither are unrelocated sites).
 - b. Provide an analysis of direct and indirect impacts to the historic structures of the Sparrow's Point Shipyard.
 - c. The Star-Spangled Banner National Historic Trail, crossings of the Old Maryland and Pennsylvania Trail (MP 31.8), the Brandywine Trail (MP 74.2), and the Mason Dixon Trail (MP 43.9) are not discussed.
 - d. Impacts to Doe's Run Village and Kirk's Mill Historic District are not discussed.
 - e. Areas of particular concern identified by the State Historic Preservation Officers (SHPOs) in pre-survey consultation are not discussed.
 - f. Ethnographic research is identified as not applicable. How was the list of contacted Native American Tribes developed? The project passes through an ethnically diverse area including a number of communities which might have associated historic properties in the project area (Underground Rail Road sites, Freedman communities, Quaker, Welsh, Dutch, German, etc.).
 - g. The proposed pipeyards/contractor staging areas are specified in Resource Report 8, Table 8.3.4-1 and shown in Figure 1A-1. When will these areas be surveyed for aboveground historic structural resources and terrestrial archaeological sites?
 - h. Section 4.4.2 states 59 previously recorded archaeological sites are within 1.0 mile of the survey area, of which 19 are within the proposed Pipeline right-of-way. Neither the text of Resource Report 4 nor Table 4.4-1 states which of the sites listed in Table 4.4-1 are located within the Pipeline right-of-way. Describe which of the 19 sites are located within the pipeline right-of-way and whether they are listed on or eligible for the NRHP.
 - i. Are any of the 59 previously recorded archaeological sites mentioned in Section 4.4.2 and listed in Table 4.4-1 located within the proposed pipeyards/contractor staging areas? If so, which sites are they and what is the NRHP eligibility status?
 - j. Text of 4.4.4 states 32 historic or prehistoric archaeological sites were documented during the Phase 1 archaeological survey. Section 4.5 states 31 sites. The survey reports in Appendix 4B explicitly state 28 sites were documented (12 in Maryland and 16 in Pennsylvania). What is the correct number of sites documented within the pipeline right-of-way? This number should include sites identified during the survey as well as previously recorded sites documented within the pipeline right-of-way.
 - k. State-assigned site numbers for newly recorded archaeological sites are not consistently used in RR 4, Table 4.4-1 and the survey reports in Appendix 4. Provide accurate site numbers if they have been assigned.
 - l. In Resource Report 4, Appendix 4-B, there are mapping errors for several archaeological sites (see Kuder and Dafoe 2006a: Figure 2, Kuder and Dafoe 2006b: Figure 2). These are primarily labeling errors. Provide accurate mapping showing the

locations of the newly recorded archaeological sites and previously recorded sites with correct site names clearly shown.

- m. The Maryland Historical Trust determination forms for both the Sparrows Point Fabricating Shop and the Sparrows Point Panel Shop are listed with District Inventory Number BA-3208 2. Is this correct? If not, what is the correct inventory number for each property?
 - n. The figure showing the location of the marine archeological investigation appears to indicate that the survey was completed before AES moved their preferred turning basin and dock location to the north. Indicate if this is indeed the case. If so, AES should contact the Maryland SHPO and discuss the need, if any, for additional marine archaeological investigations. Provide FERC with the documentation of the SHPO's response on this issue.
- 2) What is the status of the consultation with the Delaware Nation? Provide any additional correspondence with Native American tribes, the Pennsylvania and Maryland SHPOs, or other consulting parties received since submittal of Resource Report 4.

Socioeconomics

- 1) Provide the following:
 - a. dates of the Census data in Table 5.2-1;
 - b. numbers of police/sheriff officers for: Harford Co., MD; Cecil Co., MD; Lancaster Co., PA; and Chester Co.; PA;
 - c. numbers of Fire/EMS Stations for Harford Co., MD; and
 - d. numbers of Fire/EMS personnel for Harford Co., MD; Cecil Co., MD; and Chester Co.; PA.
- 2) Resolve differences in civilian labor force between Tables 5.2-1 and 5.2-2.
- 3) How would AES incorporate local emergency agency input in its estimate of the cost of emergency services support?
- 4) Regarding vehicular traffic, what is the level of service (LOS) of the I-695 off ramps (specifically, exit 43) and other access points (if applicable) near the Mittal Steel facility?
- 5) Provide estimates of vehicle trips during construction:
 - a. Daily vehicle trips for employees, truck and other surface transportation; and
 - b. Segregate by LNG terminal, DMRF, power plant and Pipeline.
- 6) Provide estimates of vehicle trips during operation:
 - a. Daily vehicle trips for employees, truck and other surface transportation; and
 - b. Segregate by LNG terminal, DMRF, power plant and Pipeline.
- 7) Has AES initiated contact with local public works departments and Maryland highway agencies regarding LOS on roadways to be used by the project? In addition, the State is concerned about traffic congestion at the Sparrows Point area during construction and

indicated that a traffic impact study needs to be performed. Demonstrate consultation with MDOT and other appropriate agencies regarding resolution of this issue.

- 8) Provide estimates of vessel trips during construction (including dredging) and operation.
- 9) Why is Pennsylvania sales tax not included in the estimates of tax revenues during construction as listed in Table 5.4-2?

Air Quality

- 1) Section 9.3.1.1, paragraph 3, is inconsistent with Figure 9.3-1. The text states 1992, but the figure states 1990-1994. Which is correct?
- 2) Table 9.3-3: Discrepancies in the Resource Report 9 reported concentrations and U.S. environmental Protection Agency (EPA) AirData reported concentrations were identified. Resource Report 9 did not provide a rationale for using substitute monitoring sites in cases where a monitor was not located in a county traversed by the proposed pipeline. In some cases Resource Report 9 did not include monitors that are located in the counties that are traversed by the proposed pipeline. The following requests that the background concentrations be reevaluated. This data request clarifies the calculation methods to be used for consistency with 40 CFR 50. The data request also suggests rules for selecting substitute monitoring sites. Additional consideration could be given to the purpose of the monitoring site and its representativeness to the pipeline area (e.g., a lead monitor located adjacent to a battery plant that is miles away from the proposed pipeline route may not be sampling air that is representative of the pipeline area).
 - a. air quality control region (AQCR) 115. The project is located only in Baltimore and Harford Counties. To further clarify, the project is not located in Baltimore City (FIPS Code 24-510), which is a different jurisdiction than Baltimore County (FIPS Code 24-005). Sufficient data are available from the two counties such that data from Baltimore City should not be used. Nor should ozone data from Carroll County be used. For example, the following appropriate monitoring stations have been identified:
 - 1) Ozone, 1-hour: 24-005-1007, 24-005-3001, 24-025-1001, and 24-025-9001. For each monitor, identify the 4th highest 1-hour average observation recorded during the years 2003, 2004, and 2005 (i.e., rank all values irrespective of year and select the fourth highest observation). Report the value for the monitor with the maximum result.
 - 2) Ozone, 8-hour: same four monitoring sites. For each monitor, identify the 4th highest 8-hour average for each year (2003, 2004, and 2005). Compute the average of the three values. Report the value for the monitor with the maximum result.

- 3) CO, 1-hour and 8-hour: 24-005-1007 and 24-005-3001. For each monitor, identify the second highest observation for each year (2003, 2004, and 2005). Select the maximum of the three values. Report the value for the monitor with the maximum result.
 - 4) NO₂, annual: 24-005-3001 and 24-025-9001. For each monitor, identify the annual average concentration reported for each year (2003, 2004, and 2005). Select the maximum of the three years. Report the value for the monitor with the maximum result.
 - 5) PM_{2.5}, 24-hour: 24-005-1007, 24-005-3001, and 24-025-1001. For each monitor, identify the 98th percentile observation for each year. Given that EPA's AirData does not provide 98th percentile observations, select the 99th percentile observation for each year. Compute the average of the three values. Report the value for the monitor with the maximum result.
 - 6) PM_{2.5}, annual: same three monitoring sites. For each monitor, identify the annual average observation for each year. Compute the average of the three values. Report the value for the monitor with the maximum result.
 - 7) PM₁₀, 24-hour: 24-005-3001. For each monitor, identify the 4th highest 24-hour average observation recorded during the years 2003, 2004, and 2005 (i.e., rank all values irrespective of year and select the fourth highest observation). Report the value for the monitor with the maximum result.
 - 8) PM₁₀, annual: same monitoring site. For each monitor, identify the annual average observation for each year. Compute the average of the three values. Report the value for the monitor with the maximum result.
 - 9) SO₂, 3-hour and 24-hour: 24-005-3001. For each monitor, identify the second highest observation for each year (2003, 2004, and 2005). Select the maximum of the three values. Report the value for the monitor with the maximum result.
 - 10) SO₂, annual: same monitoring site. For each monitor, identify the annual average concentration reported for each year (2003, 2004, and 2005). Select the maximum of the three years. Report the value for the monitor with the maximum result.
 - 11) Pb: no monitor located in the AQCR, nor in adjacent counties. Report as no data available.
- b. AQCR 114. The project is located only in Cecil County. Calculate and report as stated for AQCR 115. The following appropriate monitoring stations have been identified: 24-015-0003; 42-071-0007.

- c. AQCR 045. The project is located only in Chester County. Calculate and report as stated for AQCR 115. The following appropriate monitoring stations have been identified: 42-029-0100; 42-071-0007; 10-003-1008; 10-003-2004; 42-045-0002; 42-029-0100; 10-003-1007; 10-003-1013; and 10-003-2004.
 - d. AQCR 196. The project is located only in Lancaster County. Calculate and report as stated for AQCR 115. Monitoring Station 42-071-0007 has appropriate data for this county.
- 3) Evaluate 40 CFR 60 Subpart Kb with respect to propane, not just methane and ethane. Data concerning the operating pressure and temperature of the storage tanks are specifically requested.

Several discrepancies were found requiring immediate attention with respect to Resource Report 9 and the soon to be following draft General Conformity Analysis. Resource Report 9 indicates 4 air quality control regions which the footprint of the proposed project would cross. According to 40 CFR 81.321 and 40 CFR 81.339, EPA has designated the AQCRs differently. Depending on the pollutant of concern, several counties are included in different AQCRs. Update applicable sections and tables of Resource Report 9 to reflect the appropriate emissions per designated area as outlined below. The draft General Conformity Analysis should reflect these changes and should be submitted to FERC for review prior to sending out to other agencies.

For ozone, Baltimore and Harford Counties, Maryland are in the Baltimore, MD AQCR and Lancaster County, Pennsylvania is in the Lancaster, PA AQCR as shown in Resource Report 9. Cecil County, Maryland is not part of the Eastern Shore Intrastate AQCR for ozone; instead it is part of the Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE AQCR. Chester County, Pennsylvania is not part of the Metro Philadelphia Interstate AQCR, but is also part of the Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE AQCR. Therefore, all emissions occurring in Cecil County, Maryland and Chester County, Pennsylvania should be combined, and the Draft General Conformity Analysis should reflect these three AQCRs in addition to the Analysis for the AQCRs in Virginia.

For particulate matter with an aerodynamic diameter less than or equal to 2.5 microns, the AQCRs as presented in Resource Report 9 are correct for Baltimore, Harford, Cecil, and Lancaster Counties. Chester County, Pennsylvania is in the Philadelphia-Wilmington, PA-NJ-DE AQCR. This discrepancy should not have an effect on the draft General Conformity Analysis beyond proper labeling.

Similar AQCR designations may need to be updated for the marine emissions and each AQCR should have the full label identified and the counties included under each AQCR.

- 4) Provide the refined Draft General Conformity determination including revisions in response to the MDE, PA DNR, and VA DEQ comments and all changes necessary with respect to question # above. Also, Section 9.3.3.10 of Resource Report 9 indicates the emissions sources to be included in the general conformity review. Although the terminal with or

without the power plant would be subject to non-attainment new source review (NNSR) and/or Prevention of Significant Deterioration (PSD) review, justify for each pollutant that General Conformity could be applicable for (NO_x, VOC and PM_{2.5}) how emissions from operation of the terminal with or without the power plant should not be included in the General Conformity review. If under one of these review processes one pollutant triggers major source thresholds, clarify how the other pollutants would not be subject to General Conformity (including a reference).

Noise

- 1) Section 9.4.4.1 of Resource Report 9 states that noise mitigation measures during pipeline construction for residential areas (specifically where construction activities will be undertaken within 50 feet of a residence) are outlined in Resource Report 8. However, a review of Resource Report 8 indicates that there are no noise mitigation measures presented. Identify the mitigation measures to be used at all residences where noise levels would exceed the State of Maryland's 90 dBA noise standard. As a reminder, Maryland's 90 dBA noise standard is within 50 feet of the residential property boundary. Provide an updated table of all residences where construction would occur within 50 feet of the residential property boundary. Provide detailed noise calculations and justifications for construction activities within 50 feet of the residential property boundary, showing noise levels would be below 90 dBA.
- 2) In Tables 9.4-7, 9.4-8, 9.4-10, and 9.4-19 of Resource Report 9, the time period for the Leq values in these tables are not defined. Provide these values.
- 3) Section 9.4.4.2 of Resource Report 9 states that "AES will evaluate potential impacts and implement mitigating measures (as necessary) associated with the pressure regulating equipment during the detailed engineering." Would additional noise modeling and monitoring be conducted? Provide more detail on how these potential noise impacts will be evaluated (e.g., how will the Noise Sensitive Area (NSA) be selected) and how possible mitigation measures will be selected should these be required.
- 4) Appendix 9C of Resource Report 9 contains the Site Sound Survey and Noise Impact evaluation for the Sparrows Point project conducted by AES. Tables 4, 6, 7, and 8 of Appendix 9C show the predicted sound levels by octave band. In these tables, the data and calculations are presented for nine of the 10 typical octave bands which represent ranges of 20 to 16,000 Hz. Was the 16,000 Hz band included in the modeling analysis? If not, explain.
- 5) For both Pile Driving and HDD activities, the ambient sound levels at each NSA should be provided. Also, provide an HDD noise mitigation and compliance plan for all HDD entry or exit locations where noise due to drilling operations would exceed 55 dBA (L_{dn}) or would cause an increase of 9 dBA or more above the ambient at the nearest NSAs. This plan should demonstrate through detailed calculations/analysis that noise due to drilling operations would be projected below 55 dBA (L_{dn}) or cause less than a 9 dBA increase at the nearest NSAs with a commitment to implement specified mitigation measures (i.e. noise

barriers, compensation, temporary housing) prior to the start of drilling operations. The plan should detail how AES would ensure compliance (including documentation) during drilling operations. The plan should identify during drilling operation what measures would be taken if actual noise levels are above projected to reduce the noise levels to below 55 dBA or less than a 9 dBA increase above ambient while evaluation and installation of mitigation occurs.

Reliability and Safety

- 1) Provide section 11.2.2.2 which is referenced in Appendix 11F of Resource Report 11.
- 2) Describe the type and location of the proposed vapor fencing along the trenches. Provide detailed source strength and dispersion calculations, including appropriate assumptions, which demonstrate that flammable vapors from a spill into the trenches serving to direct LNG spills to associated impoundments would remain on site. Please note that the modeling methodology you select must appropriately represent the vapor evolution rate and line source characteristics associated with trench geometry and fences for vapor hold up.
- 3) Section 13.1.20.2 and the process flow diagrams indicate that the proposed terminal would be designed to receive a maximum ship unloading rate of 12,500 m³/hr. Section 13.1.20.2 also indicates that the LNG carriers which may call at the proposed terminal would be designed to hold between 125,000 m³ and 217,000 m³ of LNG. Describe the design provisions or operational considerations that would be implemented to accommodate LNG carriers with unloading rates greater than 12,500 m³/hr.
- 4) Provide the Whessoe Development Report Doc. No. SW00-RD-RD-007 Rev 2 Absorption of Fluid in Perlite which demonstrates that perlite loses 25% of its compacted volume when it is in liquid as referenced in Appendix 11C.
- 5) Provide reasoning behind the assumption that the compressed thickness of the blanket will be 2/3 of the resilient thickness as referenced in Appendix 11C.
- 6) Provide calculations verifying that the volumetric capacity of the flood wall will contain a single LNG tank's maximum liquid capacity.
- 7) Section 11.2.1.2 states that a guillotine spill of the 32-inch-diameter marine unloading line was used for the design spill calculations. However, the source strength input into DEGADIS provided in Appendix 11A reflects vaporization rates for a 6-inch-diameter attachment on the marine unloading line. Provide the following information:
 - a. the line designation, location, and flow rate used to determine the design spill for the tank; vaporization, process and transfer areas;
 - b. source strength calculations for each impoundment and design spill.

- 8) The study provided in Appendix 11E analyzes the effects that ship traffic has on moored LNG vessels. Provide a study that evaluates the impact of LNG carrier traffic on the existing vessel traffic in the area (vessel traffic congestion issues).
- 9) Section 11.4.6-1 referenced in the response matrix in Appendix 11F does not exist. Clarify the location in Resource Report 11 where the plan for ensuring dedicated tug services is addressed.

Issues from the State of Maryland Advisory Report, February 7, 2007

- 1) Has AES identified an alternative storage area, for use if the 20-acre proposed storage area adjacent to the LNG terminal site is unavailable due to the construction of the proposed ethanol plant?
- 2) The State of Maryland Advisory Report on the Sparrows Point LNG Project (Advisory Report) states that siting of the pipeline in the right-of-way of Maryland 695 and Interstate 95 will require, at a minimum, an exception and concurrence from the Federal Highway Administration (FHA). Provide copies of all correspondence with the FHA on this issue.
- 3) Discuss how AES' placement of the pipeline in road rights-of-way would affect Maryland's ability to expand the roads.
- 4) How would dredging activities affect recreational boating in the project area, particularly on Bear Creek?
- 5) How would the operation of AES' planned terminal (onshore, dredging, and ship traffic) affect the creation and operation of the planned DMCF on Sparrows Point?
- 6) Identify any Rural Legacy conservation easements that would be crossed. How would construction affect the ability of the landowner to keep the property in the program? Discuss any mitigation measures or special construction techniques proposed in these areas.
- 7) Discuss how AES would work with the State of Maryland regarding safety and security issues including developing a warning process and communications between citizens and state employees concerning the Bay Bridge, Francis Scott Key Bridge and Sandy Point State Park.
- 8) MDNR has indicated that the PCB analyses were "not sensitive enough to estimate PCB toxicity" and requests that "additional sediment and elutriate tests using congener-specific methods should be performed on samples collected in the area proposed for dredging." Additional recommendations from the State of Maryland regarding PCBs are given on page 14 of the Advisory Report. Also, because AES moved the location of the turning basin and the unloading platform, additional areas to be dredged have not been sampled. Address these issues, and report consultation efforts with MDNR regarding requested PCB sampling and analyses.

- 9) The State requested additional water quality sampling of dissolved oxygen (DO) in the ship channel area, and requests that if the results indicate a potential DO impact due to dredging, that AES indicate mitigation measures. Address this issue and demonstrate consultation with the appropriate state agencies.
- 10) The State indicted the Carson (2006) study commissioned by AES is not available in the bibliography, even though AES used conclusions of this study regarding real estate values. Provide the State and FERC copies of this study for review.
- 11) The State notes that regarding the Coastal Zone Management Areas, in Intensely Developed Areas (IDA) categories of land, including the LNG terminal, AES will be required to reduce storm water runoff to at least 10 percent below the load generated prior to development. AES should furnish the pollutant reduction calculations to MDE and document this consultation to the FERC.
- 12) How will AES cross class 1 and class 2 railroads? Regarding these crossings the State has requested a contingency plan for any service interruptions of MARC or freight lines caused by pipeline construction. Demonstrate consultation with the State on this issue.
- 13) The State has requested specific information on how AES intends to mitigate or offset emissions from the project, particularly nitrogen oxide, volatile organic compounds and sulfur dioxide emissions. Provide records of consultation with the State on this issue. Also, provide an analysis of the availability of the large quantities of offsets required.
- 14) The State of Maryland Advisory Report filed with the FERC on February 7, 2007 indicates on page 24 and 26 that the exhaust velocities used for modeling appear to be high and unusual stack parameter data was used for modeling. Consult with Maryland on appropriate stack parameters and exhaust velocities to be used for modeling and provide copies of consultations to FERC. Clarify whether, based on consultation with Maryland, the exhaust velocities and modeling need to be revised based on the State's comments. If so, provide the updated tables and results.
- 15) Discuss the feasibility of cold-ironing the ships at berth. Include a discussion on air quality, safety, and the anticipated availability/fleet options that would be capable of cold-ironing. Identify how this would affect emergency situations and the number of standby tugs that would be required in addition to those required when not cold-ironing. Include a comparison of the emissions from the tanker if not cold-ironing (assuming non-US fuels) and the tugs required for standby (assuming US fuels) that would additionally be required beyond normal operation because of cold-ironing. Should AES decide to use cold-ironing, update all emission tables, modeling, and the General Conformity analysis to reflect this operating scenario.
- 16) Would AES commit to using ultra-low sulfur diesel fuel (LSDF) for diesel-power equipment during construction since it will be available in the area for on-road vehicles? If so, update construction emission calculations to reflect this.

- 17) Describe how condensable particulate matter is accounted for in PM2.5 and PM10 emission estimates.
- 18) The State suggests that AES may “consider estimating PM2.5 emissions separately from PM10 emissions” to address the new NAAQS for PM2.5. AES should address this issue, report the consultations with appropriate state agencies, and update construction and/or operating emission tables and necessary.
- 19) Would AES utilize barges for the delivery of equipment to the site during construction? If so, include these emissions from the marine equipment in the construction emission calculations.