
5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF STAFF'S ENVIRONMENTAL ANALYSIS

The conclusions and recommendations presented in this section are those of the FERC environmental staff based on information provided by AES and Mid-Atlantic Express, developed through data requests by the Commission, COE, MDE, and MDNR's Power Plant Research Program; field investigations by the Commission staff; literature review; alternatives analyses; comments from federal, state and local agencies; and input from public groups and individual citizens. While our conclusions and recommendations were developed with input from the COE, EPA, Coast Guard, and PDCNR, each of these agencies will present its own conclusions and recommendations when each has completed its review of the Project. The Coast Guard will present, in its LOR and through consultation on the Transit Management Plan, its own conclusions and recommendations, prior to operation of the LNG facilities. Likewise, the COE will present its own conclusions and recommendations regarding the proposed dredging activities and the disposal of dredged materials as well as wetlands permits the COE may issue pursuant to section 10 of the River and Harbor Act and section 404 of the CWA.

As part of our review, we developed specific mitigation measures to further reduce the environmental impact that would otherwise result from construction and operation of the Project. The additional studies or field investigations that we recommend would result in site-specific mitigation and further reduce impacts; therefore, we are recommending that these mitigation measures be attached as conditions to any Certificate issued by the Commission.

We have determined that if the AES Sparrows Point LNG Terminal and the Mid-Atlantic Express Pipeline are constructed and operated in accordance with applicable laws and regulations, AES's and Mid-Atlantic Express's proposed mitigation measures, and our recommendations presented in section 5.2; construction and operation of these facilities would result in mostly limited adverse impacts. However, as described below, impacts have been minimized to the extent practicable through the development of mitigation measures either proposed by the applicants or recommended by FERC staff and the cooperating agencies.

5.1.1 Geology

Construction and operation of the proposed Sparrows Point Project would have minimal impact on geological resources and the potential for geological hazards or flooding events to significantly impact the Project is low, provided the various design measures we are recommending are implemented. Recommendations are included to ensure that the final design complies with the seismic design requirements of NFPA 59A-2001 and FERC's "*Draft Seismic Design Guidelines and Data Submittal Requirements for LNG Facilities.*"

The proposed LNG terminal site and pipeline route are situated in an area of relatively low potential for seismic activity. No mapped surface faults or active surface faults are known to exist within the terminal site or along the pipeline route. Site-specific analyses have been performed regarding the seismic potential of the LNG site. Design spectra were prepared for the SSE and the OBE. The resultant design spectra curves would be utilized in the final design of the LNG terminal structures.

A subsurface exploration program was performed at the proposed terminal site to evaluate the characteristics of the formations underlying the area and the potential for seismic soil liquefaction. An assessment of sands at the site found non-liquefiable conditions for a majority of the sands underlying the proposed terminal site. However, some of the data indicated that very loose saturated sand is present from 15 to 30 feet below ground surface. Preliminary results from site-specific ground motion analyses indicate that limited areas at the proposed terminal site may have liquefaction-susceptible sands; therefore, we are recommending additional subsurface exploration in this area to confirm the presence of the loose sand layer and collect additional data proximate to the LNG tank locations prior to the completion of the final foundation design. If it is concluded that there is a liquefiable sand layer present, then the potential effects of liquefaction must be considered and

factored into the pile design of the LNG tank foundations to compensate for potential settlements due to liquefaction.

AES would use steel H-piles topped with a pile cap for the tank support. These H-piles would be used for deep foundations to limit settlement due to the variability of the soil profile at the site, to avoid existing foundation structures and obstructions within the proposed development footprint, and to limit construction spoil. In addition, AES would not raise the ground surface within the bermed area surrounding the LNG tanks in order to limit possible down drag forces on the foundation pile of the tanks. Instead, AES proposes to construct the tank slab on top of a layer of geo-foam (expanded polystyrene).

The proposed terminal would be located in a coastal setting subject to tidal fluctuations, flooding, and major storm events including hurricanes. AES would construct the terminal in such a manner that risks posed by flooding and serious storm events would be minimized. Shorelines near the proposed LNG terminal and along the marine transit waterway should not receive wakes of appreciable size due to the slow speeds of transit of the LNG vessels and escorts/tugs and the significant distances from shore that the vessels would travel.

Construction and operation of the proposed LNG facility and pipeline would not impact any active or inactive mineral resource extraction operations.

Blasting would not be required at the proposed LNG terminal site. However, blasting may be required during excavation activities along the proposed pipeline route due to shallow bedrock conditions. To minimize impacts resulting from potential blasting activities, we are recommending that Mid-Atlantic Express file a site-specific Project Blasting Plan, prior to initiating any blasting.

The effects of an LNG spill, whether ignited or unignited, at the terminal or along the marine transit waterway would not result in significant impacts to geology at the terminal site or along the LNG ship transit route. This conclusion is not altered by the scenarios of the Expanded Zone modeling (see section 5.1.8).

The existing topography along much of the proposed pipeline route would be temporarily altered by construction-related activities. However, Mid-Atlantic Express would restore topographic contours and drainage conditions to the extent practicable following installation of the pipeline.

5.1.2 Soils

The LNG terminal and optional power plant would be located on an approximately 45-acre brownfield parcel within the existing Sparrows Point Industrial Complex located in Baltimore County, Maryland. Approximately 70 percent of this site, or 32 acres, is made land. This land is comprised of spoil material from nearby excavations and hydraulic fill from historic harbor and channel deepening. No designated prime or unique farmlands or farmlands of statewide importance were identified at the terminal site.

At the LNG terminal site and at some locations along the proposed pipeline route, there is evidence of contaminated soils and sediments. A soil sample analysis performed at the proposed terminal site indicated concentrations of SVOCs, PCBs (at the surface beneath or adjacent to transformers), and metals in the soils. Some of these constituents have concentrations exceeding the specific Maryland Non-residential Cleanup Standards for the individual constituent. Due to these existing soil conditions, AES has filed a Potentially-Contaminated Soils Management Plan. However, we are recommending that AES prepare an amended Potentially-Contaminated Soils Management Plan to ensure that potentially contaminated soils at the proposed terminal site are properly managed during construction. Additionally, to minimize impacts related to potentially contaminated soils along the proposed pipeline route, we are recommending that Mid-Atlantic Express file a report containing the results of sediment quality testing, a risk assessment, and a site-specific crossing plan for a contaminated area near the proposed Back River crossing location.

The proposed Mid-Atlantic Express Pipeline would disturb a total of approximately 1,603.4 acres of land during construction, and approximately 544.6 acres would be maintained within the permanent right-of-way during operations. Approximately 0.7 acre of soils classified as prime farmland or farmland of statewide importance would be temporarily affected by construction of the proposed pipeline. The associated

aboveground facilities (mainline valves and meter stations) would permanently impact about 0.2 acre of soils classified as prime farmland or farmland of statewide importance in Maryland and about 0.15 acre in Pennsylvania. There are no soils designated as prime or unique farmlands or farmlands of statewide importance associated with the three meter stations.

The construction of the pipeline would disturb about 160 acres of hydric soils. The impacts to these soils would be minimized by the implementation of Mid-Atlantic Express's BMPs in its ECP, and by topsoil segregation in wetlands with unsaturated soils.

The effects of an LNG spill, whether ignited or unignited, at the terminal or along the marine transit waterways would not result in significant impacts to soils at the terminal site or along the LNG ship transit route.

5.1.3 Water Resources

Groundwater

Potential impacts on groundwater associated with the use of oils, lubricants, and other hazardous substances during construction and operation of the LNG terminal would be minimized by AES's compliance with federal regulations related to fuel transport, handling, and spill response procedures and its implementation of its SPCC Plan.

There are two public water wells within 400 feet of the proposed construction workspaces associated with the pipeline. Both of these supply water wells are within Chester County, Pennsylvania (the Chester Water Authority at MP 56.3 and the Bradford Glen Water Company at MP 77.6). The pipeline route also would cross two wellhead protection areas in Maryland. The pipeline would cross the St. Stephens Elementary School wellhead protection area in Baltimore County, Maryland and the Fallston Pre-Kindergarten School wellhead protection area in Harford County, Maryland. In order to protect these wells, Mid-Atlantic Express would not store fuel or refuel vehicles or equipment within the wellhead protection areas.

Neither the proposed LNG terminal site nor the pipeline route would affect any of the EPA-designated sole source aquifers in Maryland or Pennsylvania.

Forty-one private water supply wells were identified within 150 feet of the proposed construction right-of-way. Mid-Atlantic Express would monitor the quality and yield of all public or private wells within 150 feet of the construction workspace before and after construction. Because there are some areas that Mid-Atlantic Express does not yet have access to, we are recommending that Mid-Atlantic Express file a revised table that confirms the location of wells within 150 feet of the construction work areas, including the distance and direction from the construction right-of-way. In addition, we are recommending that within 30 days of placing the pipeline facilities in service, Mid-Atlantic Express file a report with the Secretary identifying all water supply wells/systems damaged by construction and how they were repaired. The report should include a discussion concerning the well yield or quality and how each problem was resolved and include discussion of any public or private water supply disruptions and how repairs were accomplished and service restored.

If drinking water wells are impacted by construction, Mid-Atlantic Express would provide a temporary potable water source until water quality or yield has been restored. Mid-Atlantic Express would file the Project-specific version of its SPCC Plan, prior to construction.

AES would conduct limited environmental monitoring, sampling, and analyses during the geotechnical investigation to characterize the groundwater quality at the LNG terminal. Mid-Atlantic Express would characterize groundwater quality along the pipeline route during final pipeline construction design but prior to the start of construction.

Construction and operation of the proposed Project would not have a significant impact on the groundwater resources in the Project area. No groundwater impacts are expected as a result of LNG marine traffic along the transit route through Chesapeake Bay and the Patapsco River.

Surface Water

At the LNG terminal site, the construction of the facilities would impact water quality of the Patapsco River during the following activities: dredging of the approach channel, turning basin, and ship berths; removal of some existing finger piers; straightening and realignment of some sections of the shoreline bulkhead; grading activities of the terminal site; processing of dredged material at the DMRF; and hauling off the PDM to placement or reuse sites. Impacts to water quality during operation of the LNG facility would primarily result from site stormwater runoff. LNG vessels would withdraw minimal volumes of water for engine cooling and ballast. There would be neither water intakes (except emergency fire water pump intakes) nor process water generated during the operation of the LNG facility. These impacts and the proposed methods to mitigate these impacts are discussed below.

AES would mitigate surface water quality impacts from LNG terminal construction by using BMPs for minimizing/localizing turbidity (e.g., limiting incidental propeller wash in shallow sediments). During the installation of the sheet pile bulkhead wall, silt curtains would be positioned in the shallow water area to prevent sedimentation impacts. Filling activities would be conducted on the landward side of the sheet pile wall so that there would be minimal impact to the marine environment. Approximately 1.56 acres of upland will be converted to open bay bottom in order to square off the berthing area and bulkhead. Stormwater discharges from the LNG terminal construction site would be covered under a Maryland general permit, and AES will incorporate stormwater controls into the final design of the LNG terminal and DMRF.

The primary impact on water quality associated with dredging would be the resuspension of sediment into the water column. Additionally, the suspension of organic materials and sediments from dredging and prop wash could cause an increase in biological and chemical use of oxygen, resulting in a decrease of dissolved oxygen concentrations in the affected area. Lower dissolved oxygen concentrations could cause adverse effects on benthic organisms within the affected area (see section 5.1.6). In general, these impacts would be temporary and localized to the near vicinity of the dredging activities. AES proposes to use a mechanical (clamshell) dredge and has committed to using an environmental bucket for dredging the soft, top-most sediments, which would approximately equal 810,000 CY, or about 22% of the total dredging. This measure would be used to minimize suspended solids and turbidity, and in turn to reduce the risk of water impacts due to exposure to contaminants in the dredged sediments.

Dredging of the approach channel would generate a total of about 3.7 million CY of sediment. About 10,000 CY of material would be removed daily with a dredging season of approximately 243 working days in a dredging year, continuing for about 21 months. Maintenance dredging of the access channel, the turning basin, and sediments adjacent to the unloading pier would generate approximately 500,000 CY about every six years. Dewatering of dredge spoils would occur at the DMRF located on 5 acres of the terminal facility. The raw dredged materials would be transformed into PDM and transported to the 10-acre temporary PDM storage area, south of the LNG Terminal site, or to the 20-acre temporary equipment laydown and storage yard north of the LNG Terminal site. AES proposes to ship PDM offsite at an average rate of approximately 5,000 CY per day, 365 days per year, but would implement a contingency plan should it be unable to remove PDM at this rate. AES's current schedule shows that the PDM stock pile would be removed from the site within 31 months, or about 11 months after dredging activities cease. After processing, it is expected that the material would be suitable for reuse such as reclamation of abandoned mines, capping of landfills, use as construction or road bed material, and/or use as clean fill for development such as for golf courses. The PDM would be tested by AES per MDE specifications at the temporary storage area, as specified in the draft Consolidated Dredge Plan (CDP) (see Appendix D), before it is cleared for any of the above uses or placement areas. Water from the dewatering process would be treated and discharged back to the harbor in accordance with an MDE Industrial Water Discharge permit. The CDP also addresses disposition of the PDM; the capacity of the temporary placement areas onsite; the daily takeaway capacity for the PDM; the number, probable routes and impact of trucks needed to haul the PDM; and a contingency plan to dispose of the PDM in approved landfills in Virginia should there be no buyers for the PDM. No PDM would be permitted to be disposed of within wetlands or waterbodies. In order to incorporate commitments that AES has made since it issued the draft

CDP, and to confirm that concerns raised by the FERC and other agencies are fully addressed in the final CDP, we are recommending that, prior to construction of the terminal, AES file with the Secretary the final CDP along with any comments or seasonal restrictions from the COE, EPA, or MDE regarding the CDP, for review and written approval by the Director of OEP.

Stormwater discharges from the LNG terminal would be pumped from site impoundments and pass through an oil-water separator prior to flowing into a water treatment system. All stormwater would be treated prior to discharge to the Baltimore County POTW. Discharges would be monitored and tested. In addition, the runoff from the DMRF would be addressed through an individual NPDES facility permit. In accordance with CZMA regulations, the redirection of the process area stormwater runoff would result in an approximate 50 percent reduction of stormwater discharged to the Patapsco River.

The proposed pipeline route would cross 171 waterbodies in Maryland and Pennsylvania; proposed water crossings would affect total of 13,577 linear feet of waterbodies and 3.65 acres of water surface. To address issues raised by the COE regarding waterbody crossings, we are recommending that Mid-Atlantic Express revise its ECP to acknowledge that it will need to have prior, written, site-specific authorization from the COE to use riprap as a stream bank stabilization method. Mid-Atlantic Express proposes to cross the Susquehanna and Back Rivers and the Little Gunpowder Falls and an associated wetland by HDD. AES has filed additional information regarding the feasibility of the HDD crossings at Susquehanna River, Little Gunpowder Falls and wetland, and Back River. Prior to construction, Mid-Atlantic Express would file final geotechnical data to support the feasibility of performing HDD crossings at these sites. Further, because of comments received during the DEIS comment period from local and state agencies, in this FEIS, we are recommending that Mid-Atlantic Express cross White Marsh Run, Winters Run, and Octoraro Creek, and Brandywine Creek using the HDD construction method. Fourteen of the waterbodies proposed to be crossed are considered sensitive surface waters due to their listing as impaired waters on the Maryland or Pennsylvania 303d lists. In addition, the pipeline would be within three miles of five reservoirs. For two of these reservoirs, Fullerton and Loch Raven, the pipeline would cross well downstream from the reservoirs; thus the construction and operation of the pipeline should not affect these reservoirs. One reservoir, Octoraro Reservoir, is upstream of the pipeline crossing of Octoraro Creek, but two small creeks crossed by the pipeline flow into the lake. Spills of hydrocarbons (fuel or lubricants) into these small creeks could make their way into the lake. In order to minimize the possibility of any spill entering Octoraro Reservoir, Mid-Atlantic Express would prohibit the storage of fuels or lubricants within 100 feet of the two creeks, as well as all other creeks, and would prohibit fueling or maintenance activities on heavy equipment within 100 feet of any creek, river, lake or reservoir. The Conowingo Reservoir (an impoundment of the Susquehanna River) would be directly crossed by the pipeline using the HDD method. The final reservoir, Atkisson Reservoir, is located approximately 2.9 miles east of the pipeline. However, the pipeline crosses Winters Run that drains into Atkisson Reservoir about five to six miles upstream of the reservoir. Thus, any construction impacts on the water quality in the creek (increased sedimentation or turbidity) would not have a significant effect on the water quality of the reservoir.

To mitigate the impacts of an accidental spill of oil, gasoline or lubricants during construction or operation, Mid-Atlantic Express would follow the measures outlined in its SPCC Plan. There is a small, but real, possibility of a frac-out of drilling fluid during the pipeline installation by HDD. Therefore, we are recommending that Mid-Atlantic Express file its HDD Monitoring and Contingency Plan, which would include its final frac-out plan, prior to construction. In addition, we are recommending that, in the event of an unsuccessful HDD during construction, Mid-Atlantic Express file with the Secretary a site-specific plan that includes scaled drawings identifying all areas that would be disturbed by construction and file this plan concurrent with the submission of its application to the COE for a permit to construct using this plan.

Mid-Atlantic Express would obtain appropriate permits/authorizations to use the Susquehanna River as a water source and discharge location for hydrostatic testing of the pipeline. Impacts to aquatic resources potentially could occur from water withdrawal for hydrostatic testing. AES and Mid-Atlantic Express consulted with the MDNR and NMFS regarding LNG tank and pipeline hydrostatic test water withdrawals and discharges to determine the least damaging time of year to conduct these activities. Water withdrawals would be avoided

from April 21 through June 15, during the Conowingo Dam fish lift operations and potential anadromous fish spawning in the Conowingo Pool. Additionally, surface water withdrawal would be coordinated with the SRBC. Prior to the need for water from the river, SRBC requires about 12 months to allow for adequate time to complete a review. To ensure this consultation is completed, we are recommending that Mid-Atlantic Express file with the Secretary results of consultation with the SRBC regarding permits required for water use from the Susquehanna River. Hydrostatic testing of the pipe for the Back River and Little Gunpowder Falls HDD sections would use potable water trucked to the site. Mid-Atlantic Express would use energy dissipaters on the pipeline hydrotest discharges to minimize the erosive forces of the water.

Construction and operation of the proposed Project would not have a significant impact on the surface water resources in the Project area. Prop wash from operation of the LNG vessels and escorts/tugs could cause resuspension of sediment, as discussed above regarding dredging impacts. Minimal surface water withdrawals during transit for vessel engine cooling and ballast are expected as a result of normal LNG marine traffic along the transit route through Chesapeake Bay and the Patapsco River, which could affect aquatic species (see section 5.1.6) and minor, temporary water temperature alterations. However, thermal discharges from LNG carriers and escorts/tugs would not raise the overall temperature of the Patapsco River estuary nor would they aggravate conditions that contribute to hypoxia. No significant impacts to water quality would be expected from an unignited release of LNG because it is not soluble in water and the cryogenic liquid would vaporize rapidly upon contact with the warm air and water, leaving no chemical residue or long-term temperature disturbances. An LNG spill, whether ignited or unignited, at the terminal or along the marine transit waterways would not result in significant impacts to surface water quality at the terminal site or along the LNG ship transit route.

5.1.4 Wetlands

No wetlands would be affected by the construction or operation of the LNG Terminal or by the proposed increase in vessel traffic in the Patapsco River. However, the proposed pipeline construction would impact 19.43 acres of wetlands. A total of 13.64 acres would be permanently maintained as right-of-way and 4.46 acres would change from forested wetland to scrub-shrub or emergent wetlands. Mid-Atlantic Express has filed with FERC and the COE its wetland delineation reports for areas where survey access was available. We have found the survey reports to be acceptable. All final wetland surveys would be performed once property access issues are resolved, therefore, we are recommending that Mid-Atlantic Express provide, prior to construction, final wetland delineation reports for previously-unsurveyed portions of the Project.

During construction, Mid-Atlantic Express would use wetland construction methods that would minimize wetlands impacts as described in the ECP, such as segregating topsoil, and other measures in applicable permit conditions imposed by the COE, MDE, and PDEP. Mid-Atlantic Express has consulted with MDE regarding Nontidal Wetland of Special Concern at MP 22.23 and Mid-Atlantic Express has agreed to use an HDD crossing at MP 22.23 in conjunction with the HDD crossing of Little Gunpowder Falls to avoid this area.

As part of post-construction restoration of the pipeline right-of-way, Mid-Atlantic Express would conduct annual monitoring of wetlands being restored in accordance with its ECP for a minimum of three years after construction or until 85 percent of adjacent cover is established. Invasive species would also be monitored during this time, and measures would be taken to inhibit the establishment of invasive species along the pipeline. We are recommending that Mid-Atlantic Express file, prior to construction, its finalized Exotic and Invasive Species Control Plan, developed in consultation with the COE and other federal and state agencies, for the review and written approval by the Director of OEP. We are also recommending that Mid-Atlantic Express monitor the success of all affected wetlands for a period of at least 5 years and revise its Exotic and Invasive Species Control Plan, ARMP, and ECP accordingly. This time period is more stringent than the Commission staff's Wetland and Waterbody Construction and Mitigation Procedures general recommendation for 3 years of monitoring.

The discharge of dredged or fill material into waters of the U.S., including jurisdictional wetlands would require compliance, at a minimum, with the requirements of Sections 401 and 404 of the CWA and the respective state permitting programs. As part of complying with federal, state, and/or local regulatory requirements, AES and Mid-Atlantic Express must demonstrate that impacts to waters of the US, including jurisdictional wetlands have been avoided and minimized to the maximum extent practicable. Where unavoidable wetland impacts would occur, the agencies would require measures to mitigate the effects of construction and operation. AES and Mid-Atlantic Express filed a revised ARMP, included as Appendix Q of this EIS. The COE is currently reviewing the plan and will require a final, agency-acceptable version of this plan prior to issuing the Section 404 permit for the Project. With implementation of these plans, and implementation of further measures in section 5.2, impacts on forested wetlands would be long-term while impacts on emergent and scrub-shrub wetlands would be temporary and not significant.

Along the waterway for marine LNG traffic, thirteen new areas were identified where the expanded Zones of Concern would overlap NWI-mapped wetlands. Nine of these areas are in Maryland (eight in Zone 3 and one in Zone 2), and four of these areas are in Virginia (two in Zone 3 and two in Zone 2). Most of the areas in Maryland are located near Cove Point and south to Treasure Island. The areas in Virginia are near Smith Point and Cape Henry (see section 5.1.8). An increase in vessel transit and recreational vessels traveling closer to shore to avoid LNG vessels could result in minor increased potential for erosion of wetland soils from vessel wakes; however, as discussed in 5.1.1, vessel wakes would not significantly contribute to erosion potential.

If an unignited release of LNG were to occur along the LNG marine traffic route, given that LNG is lighter than water, the LNG would float on the water until it had vaporized. If the LNG were to contact any wetland plants along the transit route (areas within Zones 2 and 3 mentioned above), those species above the water line could be injured by the extremely low temperatures. Submerged aquatic plants in the open bay would be submerged far enough below the water's surface to avoid impacts from temperature fluctuations.

If an LNG release with ignition were to occur, the impacts from fire would be limited to Zones 1 or 2. Wetland plants within Zone 1 in the vicinity of the fire would burn due to the radiant heat. In Zone 2, wetland vegetation on land could be impacted from extreme radiant heat could cause localized mild to severe desiccation of individual terrestrial wetland plants. Impacts could be significant to individual wetland plants in the direct path of an LNG vessel spill. Impacts would likely affect, primarily, aboveground portions of the vegetation. These species would be expected to reestablish rapidly in the affected areas, given that their root systems would remain intact.

5.1.5 Vegetation

No significant impacts would occur to terrestrial vegetation at the LNG terminal, because the site is currently an industrial site, with little native vegetation. No SAV would be crossed along the vessel transit route. The primary impacts to terrestrial vegetation and vegetative communities would occur from construction and operation of the pipeline. Construction of the pipeline facilities would impact about 1,603.4 acres of land. Of this total, about 422.6 acres of native vegetation (forest and open lands) would be impacted during construction. Of the 312.1 acres of forest that would be cleared during construction of the pipelines and aboveground facilities, about 147.3 acres would be maintained in herbaceous cover following construction, and the remaining 164.8 acres would be allowed to revert to forest. An additional 862.9 acres of agricultural land would be impacted. The remainder of construction impacts would be to residential land, industrial/commercial land, or open water. Operation of the pipeline and ancillary facilities would permanently impact 546.7 acres. Of this, 160.5 acres of native vegetation (this includes the 147.3 acres of forest mentioned above) would be impacted. An additional 276.1 acres of agricultural land would lie within the permanent right-of-way, but would not be impacted by operation of the pipeline (see section 5.1.8).

The proposed LNG terminal and portions of the proposed pipeline route would be located within areas regulated by the State of Maryland's Critical Area Act. The Maryland Forest Conservation Act prioritizes areas adjacent to streams or wetlands, on steep or erodible soils, and within or adjacent to large contiguous

blocks of forest or wildlife corridors. We are recommending that Mid-Atlantic Express consult with the MDNR Forest Service and/or appropriate local authority(-ies) to develop a FCP and determine the need for a FSD. The FCP should be submitted to MDNR for review when the sediment and erosion control plan or grading plan is submitted. Mid-Atlantic Express should file the results of these consultations and the final FCP with the Secretary. With implementation of these plans, and implementation of further measures in section 5.2, the impacts on forested vegetation would be long-term, while impacts on other vegetative communities would be short-term.

Construction and operation of the proposed Project would not have a significant impact on the terrestrial vegetation resources in the Project area. Terrestrial vegetation along the vast majority of the Chesapeake and Patapsco shorelines would not be impacted by normal operations of the LNG ships, or by an LNG release without ignition. However, those sections of shoreline within Zone 2, as discussed above regarding wetland vegetation, would be significantly impacted (burned or desiccated) by a release with ignition of the LNG. Vegetation within Zone 3 would be significantly impacted by a flash fire, if a flammable vapor cloud reached an ignition source within Zone 3. Individuals of these species may be killed while others would be expected to reestablish rapidly in the affected areas. Damaged tree species would take longer to reestablish. Most of the terrestrial areas in Maryland are located near Cove Point and south to Treasure Island; the areas in Virginia are near Smith Point and Cape Henry (see section 5.1.8). The magnitude of the impacts to vegetation would depend upon the duration of the fire, since the ignition of the vapor cloud could result in a wildfire.

5.1.6 Terrestrial and Aquatic Species

Terrestrial Species

The proposed facilities would affect a variety of terrestrial wildlife habitats resulting in short term, and in some cases, permanent alteration of wildlife habitat. However, most of the wildlife species that are associated with these affected habitats would readily utilize adjacent habitats. These terrestrial habitats include woodlands, open land (including agricultural land), and developed land (e.g. commercial and residential land). The terminal site is on developed land and the pipeline route traverses a mix of woodlands, open land, and developed land. No state game refuges, state wildlife management areas, or National Wildlife Refuges are located within 0.25 mile of the Project area. However, the pipeline route would cross the following three types of Critical Areas as defined under the Chesapeake Bay Critical Area Protection Program: Maryland Designated Critical Area, Forest Interior Dwelling Bird Habitat, and Nontidal Wetland of Special State Concern. The terminal site is also located about 1.1 miles from the Fort Carroll Island waterbird colony, about 0.7 mile from the Sparrows Point waterbird colony, and about 1.1 miles from a recent peregrine falcon nest on the Francis Scott Key Memorial Bridge (I-695).

The alteration of terrestrial wildlife habitats is primarily a result of vegetation clearing, although Project planning would minimize the degree of clearing by siting the proposed facilities on existing developed or disturbed land to the extent practicable. Long-term impacts to wildlife habitat would be minimized by adherence to Mid-Atlantic Express's ECP. Natural revegetation of temporarily cleared areas would also mitigate the effects of the development. To address potential impacts on sensitive wildlife habitats, we are recommending that Mid-Atlantic Express consult with the appropriate FIDS habitat management entities in Maryland and consult with the PGC regarding the State Line Barrens IBA in Pennsylvania and file the results of these consultations, including any agency-recommended habitat mitigation plans with the Secretary.

Historical and current wintering waterfowl concentration and staging areas are present within the vicinity of the terminal area and could be impacted during terminal construction and by marine traffic associated with the terminal during operation. Dredging and prop wash could cause turbidity and lower dissolved oxygen levels that could temporarily affect benthic organisms, which may indirectly influence the abundance of higher trophic level organisms (i.e., the ability of waterfowl and fish to identify food sources or predators). Therefore, we are recommending that, prior to construction, AES consult with MDNR to develop final best management practices to minimize harm to waterfowl and protect waterfowl habitat within the vicinity of the

project area and file with the Secretary the results of the consultation, including any agency-recommended habitat mitigation plans. Potential detrimental effects from facility lighting at the LNG terminal would be minimized through the use of down-shielding, low-level lighting, and reductions in light duration. To further reduce potential impacts to birds, we are recommending that AES file a bird strike/impact minimization plan prior to construction of the LNG terminal. Noise from constructing the terminal (including dredging) and pipeline facilities and traffic during the construction would also adversely affect terrestrial wildlife; however, these effects would be temporary during construction and in some cases actually serve to mitigate direct impacts by causing wildlife to move out of, or avoid, the construction area. With implementation of the plans mentioned above impacts on most terrestrial species would not be significant. Best management practices for waterfowl habitat would minimize the long-term disturbances to wintering waterfowl near the terminal.

Wintering waterfowl concentration areas near the terminal could potentially be impacted by an LNG spill. If an associated fire were to occur with the release of LNG, wildlife within Zone 1 in the vicinity of the fire would likely experience mild to severe impacts, including injury (burns) or death. Similar to the scenarios discussed for terrestrial habitat, an LNG release without ignition, but with subsequent ignition of the vapor cloud, could cause significant impacts to wildlife within Zone 3 (see section 5.1.8).

Aquatic Species

Impacts to aquatic organisms including changes in habitat, potential short term and seasonal low dissolved oxygen conditions, and temporary high turbidity conditions would result primarily from proposed dredging activities. About 118 acres of open bay bottom would be affected by the removal of approximately 3.7 million CY of dredged material in order to widen and deepen the existing shipping channel and create a turning basin and ship berth. Currently the area to be dredged is dominated by polychaete worms that are pollution-tolerant, pioneering species. Pioneering species would be expected to quickly recolonize the benthic substrates after dredging. To further reduce impacts to benthic communities, we are recommending that AES consult with MDNR to verify whether the oyster population at Fort Carroll is productive and if so, whether time of year restrictions on dredging activities are needed. To date, no other timing restrictions for dredging activities have been identified by resource agencies.

High turbidity and low oxygen conditions directly related to dredging activities are expected to be temporary and localized and therefore would not have significant impact to habitat and aquatic life in the area. The potential for seasonal low oxygen conditions to persist in the deep waters of the Patapsco River shipping channel could occur. Therefore, we are recommending that AES continue to consult with the NMFS, MDNR, and ASMFC on the potential for depressed dissolved oxygen in the Patapsco River resulting from its dredging and maintenance of the ship channel, and prior to construction file the results of the consultation and any agency-recommended mitigation plan(s) with the Secretary.

Other impacts to aquatic organisms could result from pressure waves associated with pile driving activities during pier construction, vessel strikes from LNG marine traffic, and entrainment and impingement of organisms during water withdrawals for testing of LNG tanks and for ballast water for LNG ships. We are recommending that prior to construction, AES file a construction plan for the unloading dock that includes NMFS and MDNR comments on the use of existing pilings and mitigation measures, including pressure and sound wave mitigation. Impacts on aquatic species would be addressed via agency-reviewed mitigation measures or would be considered to be rare, short-term, and/or minor.

Near the terminal, during construction, dredging and pile driving activities have the potential for negative impacts to aquatic species. The impacts of dredging on aquatic species could include temporary depression of dissolved oxygen in the water column, re-suspension of bottom sediments accompanied by increased turbidity, and potential exposure to the chemicals in the contaminated surface sediments. AES would use mechanical dredging buckets and has committed to using an environmental bucket for dredging the soft, top-most sediments. This measure would be used to minimize suspended solids and turbidity, and in turn to reduce the risk of water impacts due to exposure to contaminants in the dredged sediments. To further reduce the risk of

these impacts, AES would also implement its Dredging Management Plan and ARMP. With implementation of these plans, and implementation of further measures in section 5.2, none of these impacts would be long-term or significant.

Along the waterway for LNG marine traffic, normal operations of the LNG ships could have a minor but recurring impact from entrainment of fish eggs and larvae during transit as a result of the withdrawal of water for vessel engine cooling and ballast. Because the terminal site and moving vessel transit are unlikely to support greater than average densities of ichthyoplankton, an incremental loss due to LNG carrier uptake would not significantly impact the health of the adult fish population. Shipping vessels may increase the noise and light levels within the water column and cause masking of signals, startling, and displacement to potential injury. However, the transit corridor entering the Patapsco River is used quite heavily, and the incremental increase in shipping traffic noise and light would have minimal effects on those species.

A release of LNG without ignition could cause thermal shock (cold shock) to the fish and invertebrate organisms that come into contact or that are in the vicinity of the LNG pool in Zone 1 with impacts decreasing outward through Zones 2 and 3. An ignition of LNG vapors may impact some individuals on the water surface, potentially resulting in burns or injury to individuals that cannot move away from the area or avoidance of their preferred surface habitat until temperatures returned to normal. However, mobile species, would generally move away from the LNG incident before significant damage could occur, thereby lessening any impacts the spill may cause.

Impacts to freshwater fishery resources due to construction of the proposed pipeline include sedimentation and turbidity which can bury demersal fish eggs and reduce oxygen uptake by the gills; destruction of stream bank cover which can expose fish to predators and result in elevated water temperatures; introduction of toxic water pollutants (e.g., from fuel spills) which can cause mortality; or entrainment of fish during water withdrawals for hydrostatic testing. Disturbance by construction may cause temporary emigration of fish populations from the immediate area and interrupt fish movements and migration.

Mid-Atlantic Express's ECP includes measures pertaining to seasonal activity restrictions and erosion/sediment controls to mitigate impacts to fisheries, including in streams crossed by the pipeline that may support spawning by anadromous fishes. Suspended sediment concentrations would be expected to return to preconstruction levels soon after construction in each stream is completed. Mid-Atlantic Express proposes to install the pipeline across the Back River, the Susquehanna River, and Little Gunpowder Falls using HDD. Mid-Atlantic Express would complete in-stream construction within a 24-hour period at each minor waterbody to minimize the duration and extent of disturbance. Hydrostatic test water intakes would be screened to prevent fish entrainment, and discharges would utilize energy dissipaters to reduce erosive forces. With the implementation of these measures, the impact of construction on fish and other aquatic organisms is expected to be localized and short-term. NMFS may still require timing restrictions in order to avoid potential impacts to spawning fishes in the event of a frac-out in HDD operations. Mid-Atlantic Express has filed revised waterbody crossing seasonal restrictions, which it has agreed to adhere to and which have been added to the waterbody crossing table in Appendix I.

Essential Fish Habitat (EFH)

The NMFS identified EFH for two finfish species – bluefish and summer flounder – that occur in brackish and salt waters in the vicinity of the LNG terminal activities. Life stages of these species that occur in the terminal vicinity are bluefish juveniles and adults; and summer flounder larvae, juveniles, and adults.

NMFS also identified several forage fish – river herring (also called alosine species, a collective term that includes American shad, hickory shad, alewife, and blueback herring), white perch, and yellow perch – that are prey of these EFH species; these forage fish may occur in the waters in the proposed terminal vicinity as well as in fresh waters crossed by the proposed pipeline.

Potential impacts to these species are nearly identical to those described for aquatic species in the preceding subsection. Based on the EFH assessment included in this EIS, permanent impacts to these species and their habitats are not expected.

AES has agreed to a list of mitigative measures recommended by NMFS to reduce the potential impacts to marine and anadromous fish from the construction of the LNG terminal and the sendout pipeline. These measures are discussed in section 4.6.3 of the EIS.

LNG marine traffic would cross through or near EFH for Atlantic butterflyfish, Atlantic sea herring, black sea bass, bluefish, cobia, king mackerel, red drum, red hake, scup, Spanish mackerel, summer flounder, windowpane flounder, clearnose skate, little skate, winter skate, and various shark species as it passes through the Chesapeake Bay. Normal ship operations would not have significant impacts on these EFH-designated species nor their habitats.

The effects of an LNG spill, whether ignited or unignited, at the terminal site or along the transit waterways could significantly impact the aquatic species and habitats including EFH within Zone 1; however, the likelihood of a spill is extremely remote.

As with aquatic organisms in general, a release of LNG with or without ignition could cause thermal (heat or cold) shock to the EFH-designated fish and important prey that they come into contact or that are in the vicinity of the LNG pool in Zone of Concern 1 with impacts decreasing outward through Zones 2 and 3. However, the marine transit safety and security measures make the probability of an LNG vessel spill extremely unlikely and normal ship operations would not have significant impacts on these EFH-designated species.

5.1.7 Threatened, Endangered and Other Special Status Species

The FWS and NMFS identified a total of 14 federally listed endangered or threatened species that may potentially occur in the Project area and along the marine transit route. In compliance with Section 7 of the ESA, we are requesting that the FWS and NMFS consider this FEIS as the revised Biological Assessment (BA) for the proposed Project and vessel transit. We determined that the proposed Project would have no effect, or is not likely to adversely affect 12 species if AES and Mid-Atlantic Express abide by our recommendations in Section 4.7. These recommendations include: the implementation of NMFS guidance for vessel strike avoidance of whales and sea turtles; implementation of NMFS approved training and monitoring program for shortnose sturgeon; and consultation with NMFS regarding sea turtle construction windows and monitoring.

Since surveys for the Indiana bat are planned for next spring (during the appropriate time window for survey), and completion of bog turtle surveys is required on properties where access previously has been denied, as well as development of a final bog turtle management plan is required in consultation with the FWS, we are requesting the initiation of formal consultation with the FWS for these two species, based on an assumption that the species occur at the known potential habitats along the proposed route. We have determined that the proposed pipeline may affect the federally listed Indiana bat and bog turtle. We are recommending that Mid-Atlantic Express develop a FWS-accepted Indiana bat survey plan and bog turtle management plan and complete the appropriate and outstanding Indiana bat and bog turtle surveys in consultation with FWS, MDNR, PFBC, and PGC prior to construction. We will continue to work with the applicants and FWS to supplement this BA as necessary for updating findings and determination of effect, as Mid-Atlantic Express continues to verify the presence and/or absence of these species. If this project is approved by the Commission, the Director of OEP would be allowed the authority to review and approve minor route variations to avoid Indiana bat or bog turtle habitats, as necessary, if individuals are identified along the proposed route, to avoid or further minimize overall impacts.

We are also recommending that no construction occur until consultation with the FWS and NMFS has been completed. To further protect state-protected species, we are recommending that Mid-Atlantic Express complete the surveys for state listed butterfly, moth and plant species; consult with MDNR and FWS to

develop mitigation measures for the logperch; and implement FWS's May 2007 "National Bald Eagle Management Guidelines" and nest survey protocol.

During normal operations at the terminal and along the LNG waterway, the main source of impacts to aquatic species would be potential ship strikes of marine mammals or marine turtles. If AES implements our recommendations in sections 4.7 to minimize the risk of vessel strikes, we believe the Project would not pose significant risk to these threatened and endangered species.

The effects of an ignited LNG spill, along the marine transit route could potentially impact federally listed species, including the northeastern beach tiger beetle and the state listed bald eagle. An ignited spill could produce radiant heat or fire causing injury or death to any species it comes into contact with; however, the marine transit safety and security measures make the probability of an LNG vessel spill extremely unlikely. Because of this, we have determined that the Project is not likely to adversely affect the northeastern beach tiger beetle or bald eagle. We are recommending that AES continue to consult with the Virginia field offices of the FWS for species anticipated to occur along the vessel transit route, prior to construction.

5.1.8 Land Use, Recreation, and Visual Resources

Construction of the proposed Project would affect about 1,801.4 acres of land and water for the construction of the terminal and pipeline facilities. Construction of the LNG terminal and optional power plant would impact about 198 acres of land and water: 45 acres of industrial uplands; 35 acres of near-shore riparian rights (bay bottom for the ship berths); 35 acres of temporary workspace for the operation of the dredged material recycling facility and the temporary pipeyard/contractor yards; and the remaining 83 acres for areas dredged for the approach channel and the turning basin. Construction of the pipeline and associated ancillary facilities would occupy approximately 1,603.4 acres: 1,243.1 acres for the construction right-of-way, including additional temporary workspace; 42.9 acres for temporary and permanent access roads; and 315 acres for pipeyards/contractor yards. Operation of the new facilities would require about 589.6 acres of land: 45 acres for the LNG terminal; acres for the LNG terminal; 542.0 acres for permanent pipeline right-of-way; 1.4 acres of permanent access roads; and 1.2 acres of MLVs and interconnect meter station sites.

LNG Terminal

There are no existing residences within one mile of the proposed terminal, as calculated from the western end of the LNG unloading dock, or within one mile of the LNG storage area. The nearest residential area, Turner Station, is 1.1 miles northwest from the end of the unloading dock. The most prominent visual features of the LNG terminal would be the three LNG storage tanks, each 170 feet above the current grade and 270 feet in diameter. AES prepared photo simulations of views of the proposed storage tanks. The tanks would be the most visible from Turner Station and from the causeway near the toll booths for the Francis Scott Key Bridge, on I-695. While the LNG storage tanks would be quite visible, they would be consistent in size and nature with existing industrial facilities within the Sparrows Point Industrial area.

LNG Vessel Transit

Under normal operations, LNG vessels transiting the Chesapeake waterway would have no significant impacts on current land uses or visual resources. Recreational vessels drifting or anchored in the path of an oncoming moving safety/security zone would be required to leave their location and remain outside the moving safety/security zone while the zone passes. Although this is a temporary impact – from an estimated 40 minutes to possibly two hours per occurrence, and between 2-3 times per week – it may cause an impact on typical fishing and boating routines in the channel or near-channel areas of the Bay. The impact of the LNG ship transit (with the traveling security zone) on recreational vessels would be minor and of short duration when it would occur, but it would occur periodically for the life of the Project. At 120 to 150 LNG vessels per year, the LNG shipping operations would add 5 to 7 percent to the existing large vessel traffic to Port of Baltimore. Impacts from a marine spill of LNG with ignition would depend on the location of the incident within the waterway and the size of the spill.

With respect to the Initial Zones of Concern identified in figure 4.12-1 and 4.12-2, there are no areas where Initial Zone 1 would overlap land or populated areas along the transit route, except in the immediate vicinity of Sparrows Point. Initial Zone 2 would overlap a portion of Sandy Point, which is considered a medium population area in the daytime hours of summer and low population area during the remainder of the year. Initial Zone 2 would also contact both landward ends of the Key Bridge (both Hawkins Point and Soller Point to Coffin Point), the Key Bridge itself, the causeway north of the Key Bridge, at Turner Station, and the western half of the Sparrows Point peninsula. These points of contact for Initial Zone 2 and land are mostly within the final LNG vessel approach along Brewerton Channel and the Brewerton Angle, the approach up the Sparrows Point Shipyard Channel, and within the LNG turning basin. For Initial Zone 3, there would be contact with land and significant populations from the Chesapeake Bay Bridge north – including the western shore of Kent Island, along Sandy Point including Sandy Point State Park, from Gibson Island north to Bodkin Neck, and from Bodkin Neck west and northwest to Rock Point and Hawkins Point. The communities of Rivera Beach, Orchard Beach and Turner Station would fall within Initial Zone 3 along this final segment. South of the Chesapeake Bay Bridge, Initial Zone 3 would contact only the area immediately south of the bridge and the western side of Kent Island,

AES prepared additional modeling for Expanded Zones of Concern for a worst-case scenario south of the Chesapeake Bay Bridge in which the LNG ships veer to the east or west of the channelized waterway, as shown in figures 4.12-3 and 4.12-4. This analysis was not done north of the bridge because of the existence of shallow water near the edges of the narrow channel. The following discussion presents the change in impact assessment from the initial modeling of Zones of Concern.

Expanded Zone 2 would impinge on the shoreline areas of southern Kent Island, Sandy Point, and north and south of Cove Point, and the tip of Cape Henry. The boundary of Expanded Zone 3 would impinge upon nearly all of the southern portion of Kent Island, an expanded area immediately west of the Chesapeake Bay Bridge, the areas north and south of Cove Point including the Calvert Cliffs Nuclear and Cove Point LNG facilities, and a portion of the Patuxent River Naval Air Station near Cedar Point. Many of these areas have significant population. Expanded Zone 3 would also overlap Saunders Point, Poplar Island, Plum Point, and Taylor Island, all of which are considered low or medium population areas. Expanded Zone 3 would also overlap a portion of the shoreline south of Elms Beach Park, the Smith Point area along the Potomac River, a shoreline area north of Cherrystone Inlet, and the tip of Cape Henry near Virginia Beach. Six state and local parks would be located within the Expanded Zone 2 and/or Zone 3, and are discussed further in Section 4.8.1.2. The waterway considered in this analysis is the area of the Chesapeake Bay within these Expanded Zones of Concern.

The extent of impact on recreational boaters, recreational fisherman, and commercial fishermen would depend on the number of boats in the Project area during the two to three vessel transits per week, and on several other variables such as the size of the Coast Guard-imposed safety and security zones and the width of the channel at the point where a boat encounters the LNG vessel. To minimize potential impact on other marine traffic, the Coast Guard intends to modify the current LNG security zone in 33 CFR 165.500 and 503 and to alert mariners of the security zones in effect. AES would be expected to schedule the transit of LNG vessels for times of day less likely to affect recreational boaters and special marine events such as regattas. Further, we are recommending that AES work with the Coast Guard and the Patuxent River Naval Air Station to develop the TMP in order to establish procedures to coordinate arrival and departure of LNG tankers to avoid interfering with Naval operations.

Pipeline Facilities

The proposed Project would cross within 50 feet of 179 residences and 46 other buildings at several locations along the pipeline route. The pipeline would follow existing utility and pipeline corridors through Edgemere and North Point and other urban neighborhoods of Baltimore, and through suburban communities in both Maryland and Pennsylvania. The pipeline route traverses congested areas, both residential and commercial/industrial, in numerous locations, and construction activities would cause temporary disruption to

some land owners and permanent disruption of landscaping and restricted surface use to other land owners. Pipeline construction could also affect wells and septic systems along the pipeline right-of-way. Mid-Atlantic Express has filed site-specific plans for construction near many of the residences. We have found these plans to be lacking in detail and containing insufficient mitigation. We are recommending several mitigation measures that would lessen the impact on newly-identified residential properties, require completion of construction activities within one week on any property and monitor foundations within 50 feet of construction, reduce and mitigate impacts associated with construction and traffic disturbances, and provide instruction on the details the Commission staff finds is necessary for inclusion in reviewing the site-specific plans for residences and the Victoria Crossing HOA properties. Mid-Atlantic Express has not yet completed the required surveys or plans for affected septic systems. In addition, the septic system mitigation plan Mid-Atlantic Express filed is too general to adequately protect septic systems during construction. Therefore, we are recommending that prior to construction, Mid-Atlantic Express file a revised Septic System Contingency Plan that includes specific measures for the restoration or replacement of septic systems damaged by construction.

We are also recommending mitigation measures to protect the Chester Water Authority public water mains, require a report identifying other utilities damaged during construction and how they were repaired, and maintain access to businesses and schools.

The pipeline would cross 29 parks, trails, and other special interest areas. Mid-Atlantic Express has provided some information on how these parks would be crossed and proposed some mitigation measures. We do not believe that Mid-Atlantic Express provided sufficient details. We are recommending fourteen additional mitigation measures to provide more protection/mitigation for these parks and trails, a golf course, and an animal shelter. In addition, the pipeline would cross two Girl Scout camps and a Christian Service Camp. We are recommending four additional mitigation measures to reduce the impacts to these camps.

Over half of the land that would be crossed by the Project is agricultural. Because of the amount of agricultural land that would be disturbed and the pressure on this land from regional development, we are recommending the Mid-Atlantic Express develop, prior to construction, an Agricultural Impact Mitigation Plan for the Project which would contain specific measures for protecting the fertility of the soil, protecting/repairing drain tiles, restoration of the field, and monitoring future crop success. We are further recommending consultation with all landowners with property in conservation easements to identify mitigation to protect the land. In response to comments received on the DEIS, we are recommending mitigation measures for areas with horse pastures and areas within state-designated Critical Areas.

The viewsheds along the pipeline could be affected during construction and operation of the pipeline, particularly in the riparian zones of some of the more forested segments of the route, including Gunpowder Falls and Little Gunpowder Falls (Gunpowder Falls State Park), Deer Creek, Susquehanna River, Conowingo Creek, Octoraro Creek, Doe and Buck Runs, and Brandywine Creek. General plans for crossing these areas have been prepared, but measures to preserve forest where practicable have not yet been finalized with the input of land management agencies or conservancy groups. We are recommending that Mid-Atlantic Express develop in consultation with the PDCNR, the Octoraro Creek Watershed Association, CCPRD, PFBC, and the Brandywine Conservancy, construction and mitigation plans for the Octoraro River and each of the four crossings of the Brandywine Creek system to address minimizing tree clearing within the riparian zones of the waterbodies, potential impacts to recreational and boating access during construction, and effects on the viewshed along these designated Pastoral rivers. We are recommending that Mid-Atlantic Express also consult with the Deer Creek Advisory Board, NMFS, and MDNR to develop plans for minimizing impacts to Deer Creek. We are recommending that Mid-Atlantic Express develop plans for each crossing of the Gunpowder Crossing Scenic Byway to detail the types of vegetation to be removed and how to minimize expansion of the cleared crossing.

Based on AES's proposal, along with our recommended measures to reduce impacts on special-interest lands, land use, and land requirements, we believe impacts to land use, special-interest lands, and visual resources

would be minimized. However, we do believe that there would be some long-term and permanent impacts particularly in forested residential and park areas where trees would not be allowed to regrow on the permanent right-of-way. Because the pipeline route would follow existing pipeline easements through subdivisions, the increase of the width of the permanent easements in yards would limit the landowner options of using the property. In other areas, the Project would cross areas of planned development. While maintained rights-of-way have been incorporated as open green spaces in several of these developments, the permanent easement could affect the developer's plotted plans and may reduce the amount of developable land available.

Coastal Zone Management Consistency Determination

Portions of the Project including the LNG terminal, the LNG transit route, and the initial portion of the pipeline would be within designated coastal zone management areas in the states of Maryland and Virginia. AES filed the CFRA application with the MDE Wetlands and Waterways program on January 8, 2007. The Project application provided the basis for the environmental review associated with the various applications under CFRA. On several occasions since the initial filing, MDE requested additional information to support the CFRA application, and AES filed this information. On July 9, 2007, MDE sent a letter to AES and provided a copy to the FERC, in which MDE denied CZMA consistency to the Project. On August 8, 2007, AES filed a notice of appeal of the consistency determination with the Secretary of Commerce. In June 2008, the Secretary of Commerce ruled in favor of AES's appeal, and found that the Project would be consistent with the provisions of the CZMA.

The Coast Guard would ensure compliance with the CZMA, as necessary, for the establishment of the safety and security zones for LNG marine traffic affecting Maryland and Virginia waters.

5.1.9 Socioeconomics

Construction and operation of both the LNG Terminal and the pipeline would result in a nominal addition to the local population and have minimal impact on the availability of housing, local schools or social services. The localities where the Project would be built would benefit economically from the employment of local workers, the expenditure of payroll money, the purchase of local materials and supplies, and the addition of monies, both one-time and annual tax revenue.

Service studies on the I-695 ramps at Exit 43 near the LNG Terminal site concluded that additional traffic from commuting construction workers and material and supply deliveries to the LNG Terminal would not exceed the capacity of the roadways. AES filed a Construction Traffic Management Plan, with comments from interested employers at Sparrows Point. We have concluded that this plan addresses and minimizes potential problems with worker access to other employment centers on Sparrows Point. In order to account for any changes in local employers since development of the initial plan, we are recommending that AES update the plan to ensure the plan accounts for current traffic conditions, prior to construction.

Pipeline construction activities along I-695 would be coordinated with MDOT and would be conducted in accordance with permit requirements. Because construction would move sequentially along the pipeline route, any transportation impacts would be temporary on any given roadway, and the transportation system would be minimally impacted by construction. However, we are recommending that Mid-Atlantic Express continue to consult with MDOT regarding construction along I-695 and the development of any site-specific traffic plans wherever road closures would be required.

During operation of the Project, two to three LNG ships per week would arrive at the LNG terminal site, for a total of approximately 150 ships per year. Impacts from the LNG vessels on commercial shipping interests, including cruise ships, are expected to be consistent with existing marine shipping traffic and associated impacts. A moving security zone is required around LNG ships. The Coast Guard would minimize the disruption to other waterway users by the control of the LNG vessel. The Maryland Pilots indicated that any potential disruption associated with the passage of LNG ships in the Port of Baltimore could be effectively

managed by means of appropriate scheduling and spacing between ships. Local fishing operations would be affected when required to move out of the security zone of the LNG vessels. Commercial fishermen are permitted to fish within hours regulated by MDNR. Therefore, it may not be feasible to recover the amount of time lost due to a passing LNG ship. To address the concerns raised regarding impacts to shipping and fishing interests from LNG vessel transit, we are recommending that AES continue to consult with the Port of Baltimore and other major shipping and commercial and recreational fishing interests along the marine transit route and develop specific operational and communication guidelines for LNG vessels. The Port of Baltimore could see benefits from improved infrastructure associated with LNG vessel transit including new powerful tugs with firefighting capabilities which currently are not available in the area, and increased investment in the port due to increased maritime activity.

The socioeconomic impacts of an ignited or unignited marine LNG release could be significant, depending on location where the incident occurred, the scope of the incident, and the time of year the incident occurred. Ship traffic would be halted until the affected LNG vessel could be safely removed from the waterway. A substantial unignited LNG release and dispersion would be a short-lived event and may result in temporary closure of the port.

Local populations in Zones 1-3 could be affected depending on location of the incident relative to the population, the scope of the incident, and whether the LNG released ignited or evaporated (see section 5.1.8). This could be a significant impact with injuries ranging from mild to fatal, being most severe in Zone 1 and decreasing outward through Zones 2 and 3. While the potential for harm is clear, the significance is highly variable depending on a number of factors. However, because of the implementation of safety and security measures during marine transit, the probability of a marine spill from an LNG vessel is extremely low and not considered a reasonably foreseeable event.

Recent studies have generally concluded that LNG facilities would not have a significant effect, positive or negative, on property values. In areas disturbed by pipeline construction, whether property values are adversely affected is dependent on many factors, including the size of the parcel, the parcel's current value, land use, proximity of the parcel to or location on the parcel of existing utilities or rights-of-way, and the value of other nearby properties. In addition, in areas where construction of the pipeline facilities removes and may preclude replacement of landscaping and hardscaping, (such as: mature trees, ponds, pools, decks, patios, and to some extent mature perennial gardens) the pipeline may result in an adverse impact on property values if the potential buyer places value on such items. In addition, restrictions on the property caused by pipeline easements may be off-putting to some potential buyers depending on their plans for the property.

The proposed terminal location lies within an existing industrial area in which heavy industry manufacturing facilities currently exist and function. Development of the terminal is consistent with existing development and does not represent a new or inconsistent development with respect to existing environmental conditions; therefore, the Project is not expected to affect HUD funding to surrounding communities or environmental justice areas.

As a linear feature, the LNG transit corridor transects an assemblage of varying socioeconomic character determined by the presence of the waterway or other adjacent features. Further, the shipping route used by LNG vessels is not discretionary. That is, the corridor was developed prior to the concept of its use for LNG traffic and alternative corridors are not available. Therefore, the vessel transit corridor is clearly not influenced by environmental justice considerations.

The pipeline route was selected to minimize potential adverse impacts to landowners and stakeholders. The proposed route maximizes the use of existing utility and highway rights-of-way, in an attempt to minimize impacts to undisturbed land. However, due to the population density in the project area, it was very difficult to completely avoid residential areas. The proposed route would affect residents in a wide range of income levels and ethnic backgrounds. Most of the environmental impacts associated with proposed pipeline construction would be temporary and would affect all sensitive receptors equally; no single environmental justice area or community would be disproportionately affected.

5.1.10 Cultural Resources

In accordance with 36 CFR Part 800.6(a)(1), the FERC has informed the ACHP that the project may adversely affect historic properties. To mitigate the effects on cultural resources, we will complete a PA for review by the SHPOs, ACHP, and AES. The draft PA outlines the measures that would be taken to mitigate and avoid project adverse effects to properties on or eligible for the NRHP.

Within the LNG terminal lease area, five aboveground architectural resources have been identified, of which three are components of the NRHP eligible Sparrows Point Shipyard Historic District. We are recommending that AES not construct or begin demolition activities at the Sparrows Point Shipyard Historic District until consultation with the Maryland SHPO and FERC is completed and AES develops an appropriate mitigation plan for potential adverse impacts to this historic property. While it would potentially affect the Sparrows Point Shipyard, the LNG facility would have no impact on terrestrial or submerged archaeological sites.

Along the pipeline route, 47 archaeological sites have been identified, of these, 29 may be eligible for the NRHP and would require additional evaluations. Also on the pipeline route, ten aboveground historic properties or districts are located in or near the Project area. We are recommending that, prior to construction, Mid-Atlantic Express complete all remaining cultural surveys, provide these results to the Maryland and Pennsylvania SHPOs, and file the final reports of these surveys with the Secretary for review and written approval by the Director of OEP.

We evaluated potential effects on cultural resources along the LNG ship transit for an expanded area based on the corridor through which the ships could pass rather than just the linear preferred route of transit. There are 254 terrestrial archaeological sites within the transit Zones of Concern. Thirteen are located in Virginia and 241 are located in Maryland. Almost all of these (246 sites) are located on or near the shoreline in Zone 3. Additionally, 134 aboveground historic resources are located within the Zones of Concern. Twenty-six are listed on the NRHP, three are eligible for listing on the NRHP, and two may be eligible for inclusion on the NRHP. Terrestrial archaeological sites are below ground resources and would not be expected to be adversely affected by a fire associated with a release or event. Aboveground cultural resources such as historic buildings and other structures could be adversely affected by an LNG release. These effects include physical destruction or damage from radiant heat or fire.

AES identified 379 submerged cultural resources and possible cultural resources within the expanded transit route Zones of Concern. These include 376 shipwrecks and other submerged obstructions like submerged barrel wells, and three inundated historic and prehistoric archaeological sites. Of the 376 reported shipwrecks and submerged obstructions, 204 are located in Zone 1, 87 in Zone 2, and 86 in Zone 3. The effects of an LNG release, including fire and radiant heat, would be greatly reduced for all cultural resources below the water surface. No significant additional impacts to archaeological sites are expected due to LNG vessel traffic along the waterway. The Virginia-SHPO concurs with this assessment (letter of October 8, 2008). The Maryland SHPO has requested additional information about potentially affected sites in Maryland waters. No national historic landmarks or tribal land/fishing areas are located within the proposed transit route or Zones.

5.1.11 Air Quality and Noise

Air emissions resulting from construction of the proposed Project would be short term in most areas and would not significantly affect air quality in the region. AES would implement BACT for primary pollution control for the facility operations. The Sparrows Point terminal is located in an area of nonattainment for ozone and PM_{2.5}, as are several counties along the pipeline route. As a result, a draft General Conformity Determination was prepared and issued for public comment on October 2, 2008. The Project will meet General Conformity requirements using a combination of mitigation measures and offsets. The draft General Conformity Determination is provided in Appendix R. The final General Conformity Determination will be prepared and issued in accordance with the conformity implementing regulations when it is completed. We are recommending that AES and Mid-Atlantic Express file documentation of the availability of appropriate offsets to comply with General Conformity regulations.

Along the LNG transit waterway, LNG vessel and escort vessel emissions affecting any one localized area would be temporary and transient, and occur at distances allowing for considerable dispersion before reaching any sensitive receptors. LNG ship and tug emissions, as mobile sources, are exempt from PSD/NNSR permitting. Several counties along the ship transit route are designated as nonattainment for ozone and PM_{2.5}. These emissions were addressed in the draft General Conformity Determination referenced above.

In order to provide a thorough evaluation of the potential impacts on air quality in the vicinity of the proposed Project, AES conducted a quantitative assessment of Project air emissions. The assessment included air dispersion modeling analyses to predict off-site (i.e., ambient) concentrations in the vicinity of the Project for criteria air pollutants resulting from proposed emissions associated with the operation of the Project for comparison to federal and Maryland air quality standards. Predicted impacts were evaluated for operation of the terminal in conjunction with unloading emissions, the nonjurisdictional power plant, plus hoteling, tugs, one to four security escorts, and USCG security boats in a moored safety zone. When predicted impacts are added to monitored ambient background concentrations in the vicinity of the Project, maximum impacts are below the applicable ambient air quality standards.

We are recommending that prior to construction; AES and Mid-Atlantic Express prepare and file a Fugitive Dust Control Plan for the review and written approval by the Director of OEP to further address construction impacts on air quality.

In the event of a marine LNG spill, any LNG released would vaporize. If the vapor cloud ignited, combustion emissions would be released into the atmosphere. The types and amounts of emissions from the ignition of an LNG pool from a substantial release would depend on the weather, other conditions at each specific location along the waterway, and the scope of the incident.

Noise impacts from operation of the LNG terminal would be below ambient noise standards. The closest NSA to the terminal is more than a mile away. A quantitative noise analysis conducted for the Project demonstrated that noise levels resulting from the operation of the terminal and optional power plant would have negligible increases in ambient noise above existing levels. However, we are recommending that AES file noise surveys for the LNG terminal within 60 days of placing it in service to ensure increases in ambient noise are negligible.

We also assessed potential noise impacts at three HDD locations proposed by Mid-Atlantic Express. HDD activities would proceed on a 24-hour schedule, introducing noise during nighttime hours. Mid-Atlantic Express modeled the anticipated noise impacts from HDD operations at the nearest NSAs, for all three potential HDD sites, considering impacts both with and without sound barriers. The results of the analysis indicate that by installing noise barriers, noise associated with HDD activities would remain below the FERC and State of Maryland L_{dn} guideline value of 55 dBA, with the exception of the Susquehanna River HDD entrance location. The noise associated with HDD activities would be temporary and would cease with the completion of HDD activities. Mid-Atlantic Express has committed to use sound dampening barriers at all HDD entry or exit sites that are within 0.5 mile of NSAs. In addition, Mid-Atlantic Express would employ additional noise mitigation measures including the use of mufflers, sound barriers, and equipment and work enclosure areas. Mid-Atlantic Express would also conduct noise monitoring at the Susquehanna River HDD entrance and Little Gunpowder Falls HDD exit locations to determine if the guidance value is being exceeded. We are recommending additional noise analyses for the recommended HDD crossings of White Marsh Run, Winters Run, Octoraro Creek and West Branch Brandywine Creek.

5.1.12 Reliability and Safety

In order to analyze the safety, operability, and reliability of the proposed facilities, we performed a cryogenic design and technical review of the proposed terminal design and safety systems. Our evaluation of the front-end-engineering design of the proposed LNG storage facility included a review of the cryogenic safety; thermodynamics; heat transfer, instrumentation; cryogenic processes; and other relevant safety systems. As a result of this technical review, we identified a number of concerns and have made recommendations to address these issues. Compliance with these recommendations would need to be demonstrated by AES prior to initial

site preparation, prior to construction after final design, prior to commissioning, or prior to commencement of service. Therefore, we believe that appropriate features and modifications to enhance the safety and operability of the proposed LNG facility would be incorporated into the facility design.

We also verified the exclusion zone modeling performed to ensure compliance with the federal siting standards. Although the exclusion zones for the 1,600 and 3,000 Btu/ft²-hr radiant heat flux levels from the storage tanks would extend beyond the property line of the terminal site, AES has entered into an option-to-lease agreement with the owner of the terminal site. This agreement would prohibit use of these areas in any manner that would conflict with the federal siting standards for LNG facilities. Therefore, we believe that the proposed facility would comply with the siting requirements of 49 CFR 193.

In accordance with 18 CFR 157.21 and Navigation and Vessel Inspection Circular 05-05, AES submitted a WSA to the Coast Guard on March 3, 2006, that proposed mitigation measures to address identified navigation safety and maritime security risks posed by LNG marine traffic. The Coast Guard reviewed AES's assessment and also conducted its own independent risk assessment regarding accidental and intentional release scenarios involving LNG marine traffic. Based on this review, and under the terms of our Interagency Agreement, the Coast Guard provided us with its own assessment as to the suitability of the waterway for LNG marine traffic.

The Coast Guard's WSR, issued February 25, 2008, identified specific risk mitigation measures which must be in place to responsibly manage the maritime safety and security risks of the proposed LNG facility. The report indicated that the port community does not currently have these resources and that the Chesapeake Bay is not currently suitable for the type and frequency of LNG marine traffic associated with the proposed LNG facility. In an October 24, 2008 letter, the Coast Guard determined that the additional RMMs proposed by AES would be acceptable if properly implemented (see Appendix J for the WSR and RMMs). The Coast Guard has preliminarily determined that the waterway can be made suitable for LNG marine traffic if these additional measures are put into place. As a result, we are recommending that AES ensure that the facility and any LNG vessel transiting to and from the facility comply with all requirements set forth by the Coast Guard Captain of the Port Sector Baltimore.

In accordance with Section 3A of the Energy Policy Act of 2005, we are recommending that AES develop an ERP which includes a Cost-Sharing Plan. The Cost-Sharing Plan must contain a description of any direct cost reimbursements AES agrees to provide to any state and local agencies with responsibility for security and safety at the LNG terminal and near vessels that serve the facility. This plan, which would have to be approved prior to initial site preparation at the facility site, would address concerns of local communities related to the costs related to security/emergency management of the proposed LNG facility and LNG marine traffic.

5.1.13 Cumulative Impacts

We identified 17 existing, approved, or proposed activities/projects that could potentially result in cumulative impacts when considered with the Sparrows Point Project.

Of the 17 activities/projects, 6 are pertinent to the construction and operation of the LNG terminal. These include the possible Sparrows Point Power Plant that AES may build within the Sparrows Point LNG Terminal, an ethanol plant, the expansion of the Cove Point LNG terminal (and associated increase in vessel transits), widening of a highway, and two wastewater treatment plant upgrades. In addition to the projects discussed, 13 dredging projects could have potential cumulative effects on the water quality of the Patapsco River. The other 11 projects are pertinent to the Mid-Atlantic Express Pipeline and include a wastewater treatment plant upgrade; an industrial facility expansion, five highway/road projects, a military base realignment/closure, a natural gas pipeline expansion (Transco's Sentinel Expansion Project, FERC Docket No. CP08-31, Commission Order issued on August 14, 2008), a new natural gas pipeline, and a landfill biogas project. Construction of the various projects for which a schedule is known is expected to occur between 2008 and 2013.

Cumulatively the proposed Project would result in more frequent impacts on the water quality and aquatic habitat of the Patapsco River; however, we expect impacts would be minimal and localized. With AES's implementation of BMPs in its ECP, the Project's contribution to cumulative impacts to the waters crossed by both projects would be minor. Specific resources to which the Project would have a cumulative contribution are as follows:

- The Project's cumulative contribution to impacts on non-forested wetlands would be minimal and temporary, as these wetlands would be allowed to return to their preconstruction state following construction.
- Minimal contribution to cumulative loss of forest within the permanent pipeline right-of-way, as forested sites within the operational footprint of the Project would be maintained in an herbaceous state during the operation of the proposed facilities. This would contribute incrementally to forest interior habitat degradation. Of the total 312.1 acres of forest loss during the construction phase of the Project about 164.8 acres would be outside the permanent right-of-way and be allowed to revegetate as forest after construction.
- Enforcement of the Coast Guard security zone around Project LNG vessels would add to the frequency of restrictions on vessel movement in Chesapeake Bay (currently experienced only as far north as Cove Point).
- Where the pipeline follows an existing utility corridor through forested habitat, the corridor would be widened.
- There would be positive cumulative economic benefits from the Project such as contribution to the local tax base and a benefit on personal income of the local population.
- Construction of the Project and some of the reasonably foreseeable projects/activities would have a cumulative impact to noise and air quality.
- Operation of the proposed Project, primarily at the LNG terminal and along the waterway for LNG marine traffic, would add to cumulative impacts to noise and air quality for the life of the Project. The cumulative impacts regarding air quality are addressed in the General Conformity Analysis where mitigation measures to reduce these impacts were evaluated.

5.1.14 Alternatives

As an alternative to the proposed action, we evaluated the no action and postponed action alternatives, and alternatives specific to the proposed LNG terminal and the proposed pipeline.

While the no action alternative would eliminate the short- and long-term environmental impacts identified in this final EIS, the objectives of the Project would not be achieved, and thus AES and Mid-Atlantic Express would not be able to provide a new source of natural gas to markets via the proposed pipeline interconnects. Postponed action would simply delay and environmental impacts as well as the benefits of a new natural gas source.

The Coast Guard's preferred alternative is the issuance of an LOR with conditions and limitations as discussed in the WSR. In some cases, a reasonable alternative for the Coast Guard is the issuance of an LOR without conditions. On this Project, this alternative is deemed not reasonable and was eliminated from further analysis because it would preclude the Coast Guard from exercising its responsibilities to adequately ensure the safety and security of the Sparrows Point area and navigable waterways. For the Sparrows Point Project to proceed as proposed, the Coast Guard must issue an LOR finding that the Patapsco River/Chesapeake Bay/territorial seas waterway is suitable for the LNG marine traffic that would be associated with the proposed Sparrows Point import terminal facility, with conditions. Alternatives to this action include the issuance of an LOR finding the waterway not suitable or postponement of the issuance of an LOR. According to the Coast

Guard's WSR they have found the waterway is not currently suitable, but can be made suitable for LNG vessel traffic. AES would need to develop a cost sharing and transit management plan along with the Coast Guard, state, and local entities to ensure the necessary resources are available to make the waterway suitable for increased LNG vessel traffic.

LNG terminal facility alternatives that we evaluated include existing LNG import terminal systems; other approved, proposed, or planned LNG projects; LNG terminal site alternatives in Chesapeake Bay; offshore terminal (deepwater port) alternatives; unloading platform design and location alternatives; and regasification alternatives. No existing, approved, or proposed LNG terminal system would be able to provide sufficient capacity to handle the proposed Project's LNG volumes and/or would not be able to maintain the needed sendout capacity. Potential environmental impacts of an offshore LNG terminal and associated pipeline would be similar to or greater than those from the construction of the proposed Project. To provide gas to the target markets, the only existing bay system with adequate water depths is the Chesapeake Bay. Of the various sites considered within the Bay, Sparrows Point would be the preferred location for the proposed Terminal, primarily due to the industrial setting of the site, its distance from residential areas, and its proximity to the targeted market. The alternative Mittal Steel site on the Sparrows Point peninsula was still not available as of December of 2007. The proposed location for the unloading platform, at the existing Pier 1, appears to be the better choice. The proposed vaporization process utilizing HTF heated by hot water would be preferred over the other gas-fired alternatives because SCR can be incorporated to reduce air emissions. Utilizing seawater for vaporization is not viable because of the impacts to aquatic organisms from impingement, entrainment, and water temperature reduction.

Our analysis addressed alternative dredging methods. To reduce turbidity and TSS as a result of dredging, and to reduce the release or entrainment of contaminated sediments into the water column during dredging, mechanical dredging is preferred over hydraulic dredging for the Project. Mechanical dredging alternatives include an enclosed clamshell bucket or a navigational-type bucket (or functional equivalent), or an environmental bucket. AES has committed to use an environmental bucket to dredge the soft, top-most sediments.

We also addressed dredged material disposal alternatives and have concluded that AES's proposed reuse of dredged material from the Patapsco River is superior to conventional open water disposal, existing contained placement facilities, or ocean disposal.

Pipeline alternatives that we evaluated include system alternatives, route alternatives, and route variations. Our evaluation of system alternatives included an evaluation of whether exiting and proposed natural gas pipeline systems would meet the proposed Project objectives while offering an environmental advantage over the proposed Project. While two existing pipelines are in the general region of the proposed Mid-Atlantic Express Pipeline and could be reached by constructing an approximately 20-mile connector pipeline, neither currently has capacity to accommodate the proposed Project's gas volumes, and backhaul options would reduce the operational flexibility (including gas storage availability) that would be realized by the proposed interconnects at Eagle, Pennsylvania. Furthermore, looping existing systems would provide no environmental advantage over Mid-Atlantic Express's proposal to parallel existing systems; and delivering the gas directly to BGE (thus eliminating the need for most of the proposed pipeline) would fail to achieve the objective of the Project to provide a new source of gas into the Mid-Atlantic market.

We considered several alternatives to the proposed action including: Coast Guard alternatives; the no-action and postponed action alternatives; LNG system alternatives, LNG terminal site alternatives; and pipeline system and route alternatives.

We evaluated four major route alternatives and 30 route variations. We are recommending incorporation of 12 route variations. 5 route variations avoid conflicts with the SHA CAROW for Route I-695, Cove Road, and Chesaco Avenue; 1 route variations address concerns of residents within the Saint Anne community; 1 route variation avoids a congested residential area; 1 route variation avoids the congested Hunters Ridge

subdivision; 1 route variation avoids the Kirks Mill Historic District; and 3 route variations avoid forested areas or sensitive resources.

5.2 FERC STAFF'S RECOMMENDED MITIGATION

If the Commission authorizes the Sparrows Point Project, we recommend that the following measures be included as specific conditions of the Order. We believe these measures would further mitigate the environmental impacts associated with the construction and operation of the proposed Project.

1. AES and Mid-Atlantic Express shall follow the construction procedures and mitigation measures described in the applications, supplemental filings (including responses to staff data requests), and as identified in this EIS, unless modified by the Commission Order. AES and Mid-Atlantic Express must:
 - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of OEP before using that modification.
2. For pipeline facilities, the Director of OEP has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the Project. This authority shall allow:
 - a. the modification of conditions of the Commission Order; and
 - b. the design and implementation of any additional measures deemed necessary (including stop-work authority) to assure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from Project construction and operation.
3. For LNG facilities, the Director of OEP has delegated authority to take all steps necessary to ensure the protection of life, health, property, and the environment during construction and operation of the Project. This authority shall include:
 - a. stop-work authority and authority to cease operation; and
 - b. the design and implementation of any additional measures deemed necessary to assure continued compliance with the intent of the conditions of the Commission Order.
4. The authorized facility locations shall be as shown in this EIS, as supplemented by filed alignment sheets and shall include all of the staff's recommended facility locations identified in section 3.3.3 of the EIS. As soon as they are available and before the start of construction, AES and Mid-Atlantic Express shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Commission Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Mid-Atlantic Express' exercise of eminent domain authority granted under the NGA section 7(h) in any condemnation proceedings related to the Commission Order must be consistent with these authorized facilities and locations. Mid-Atlantic Express right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas pipeline to

accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. AES and Mid-Atlantic Express shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on maps/sheets/aerial photographs. Each area must be approved in writing by the Director of the OEP before construction in or near that area.

This requirement does not apply to extra workspace allowed by the AES's and Mid-Atlantic Express's Project-specific plans and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
 - b. implementation of endangered, threatened, or special concern species mitigation measures;
 - c. recommendations by state regulatory authorities; and
 - d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.
6. **Within 60 days of the acceptance of the certificate and authorization and before construction of the respective Project components**, AES and Mid-Atlantic Express shall each file with the Secretary an Implementation Plan for review and written approval by the Director of OEP. AES and Mid-Atlantic Express must file revisions to the plans as schedules change. The plan shall identify:
 - a. how AES and Mid-Atlantic Express will implement the construction procedures and mitigation measures described in their application and supplements (including responses to data requests), identified in the EIS, and required by the Order;
 - b. how these requirements will be incorporated into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
 - c. the number of Environmental Inspectors (EIs) assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
 - d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
 - e. the training and instructions AES and Mid-Atlantic Express will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change), with the opportunity for OEP staff to participate in the training session(s);
 - f. the company personnel (if known) and the specific portion of AES's and Mid-Atlantic Express's organizations having responsibility for compliance;

-
- g. the procedures (including use of contract penalties) AES and Mid-Atlantic Express will follow if noncompliance occurs; and
 - h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
 - (1) the completion of all required surveys and reports;
 - (2) the mitigation training of onsite personnel;
 - (3) the start of construction; and
 - (4) the start and completion of restoration.
7. Mid-Atlantic Express shall develop and implement an environmental complaint resolution procedure for at least 3 years following the completion of construction. The procedure shall provide landowners with clear and simple directions for identifying and resolving their environmental mitigation problems/concerns during construction of the Mid-Atlantic Express Pipeline and restoration of the right-of-way.
- a. in its letter to affected landowners, Mid-Atlantic Express shall:
 - (1) provide a local contact that the landowners should call first with their concerns; the letter shall indicate how soon a landowner should expect a response;
 - (2) instruct the landowners that if they are not satisfied with the response, they should call Mid-Atlantic Express' Hotline; the letter shall indicate how soon to expect a response; and
 - (3) instruct the landowners that if they are still not satisfied with the response from Mid-Atlantic Express's Hotline, they should contact the Commission's Enforcement Hotline at (888) 889-8030 or at hotline@ferc.gov.
 - b. in addition, Mid-Atlantic Express shall include in its weekly status reports a copy of a table that contains the following information for each problem/concern:
 - (1) the identity of the caller and the date of the call;
 - (2) the identification number from the certificated alignment sheet(s) of the affected property and the location by milepost;
 - (3) the description of the problem/concern; and
 - (4) an explanation of how and when the problem was resolved, will be resolved, or why it has not been resolved.
8. AES shall employ at least one EI, while Mid-Atlantic Express shall employ a team of EIs per construction spread. The EIs shall be:
- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Commission Order and other grants, permits, certificates, or other authorizing documents;
 - b. responsible for evaluating the construction contractors' implementation of the environmental mitigation measures required in the respective contracts (see condition 6 above) and any other authorizing document;
 - c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
 - d. a full-time position, separate from all other activity inspectors;

-
- e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
 - f. responsible for maintaining status reports.
9. **Prior to any construction of the respective Project components**, AES and Mid-Atlantic Express shall each file with the Secretary affirmative statements, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.
 10. Mid-Atlantic Express shall file with the Secretary updated status reports prepared by the head EI on a weekly basis until **all construction and restoration activities are complete**. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
 - a. the current construction status of the each pipeline spread, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
 - b. a listing of all problems encountered and each instance of noncompliance observed by the EIs during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
 - c. a description of corrective actions implemented in response to all instances of noncompliance, and their cost;
 - d. the effectiveness of all corrective actions implemented;
 - e. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Commission Order, and the measures taken to satisfy their concerns; and
 - f. copies of any correspondence received by AES or Mid-Atlantic Express from other federal, state, or local permitting agencies concerning instances of noncompliance, and the respective response.
 11. Mid-Atlantic Express must receive written authorization from the Director of OEP **before commencing service from the pipeline**. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas of Project-related disturbance are proceeding satisfactorily.
 12. AES must receive written authorization from the Director of OEP **before commencing service from the LNG terminal**. Such authorization will only be granted following a determination that the facilities have been constructed in accordance with FERC approval and applicable standards, can be expected to operate safely as designed, and the rehabilitation and restoration of areas affected by the Project are proceeding satisfactorily.
 13. **Within 30 days of placing the facilities in service**, both AES and Mid-Atlantic Express shall each file with the Secretary an affirmative statement, certified by a senior company official:
 - a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
 - b. identifying which of the conditions in the Order AES and Mid-Atlantic Express has complied with or will comply with. This statement shall also identify any areas affected by the Project

where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for the noncompliance.

14. **Prior to construction**, Mid-Atlantic Express shall obtain prior, written, site-specific authorization from the COE to use riprap as a stream bank stabilization method and revise note No. 4 on Figure 22 of its ECP to indicate this. (section 2.3.2.2)
15. **Prior to construction from MP 3.55 to MP 5.00**, Mid-Atlantic Express shall incorporate into the Project Route Variation 1B, as depicted on figure 3.3.3-1 of the EIS. Mid-Atlantic Express shall file with the Secretary updated alignment sheets. In addition, Mid-Atlantic Express shall file final site-specific plans for crossing the developed commercial tracts, including depictions of all roads, parking lots, and utilities (water, sewer, storm sewer, electric service, and telecommunications cables) that will be crossed; and a plan for ensuring safe access to businesses by the employees and by the public. (section 3.3.3)
16. **Prior to construction from MP 5.00 to MP 5.60**, Mid-Atlantic Express shall incorporate into the Project Route Variation 1C, as depicted on figure 3.3.3-1A of the EIS. Mid-Atlantic Express shall file with the Secretary updated alignment sheets. In addition, Mid-Atlantic Express shall file final site-specific plans for crossing the developed commercial tracts, including depictions of all roads, parking lots, and utilities (water, sewer, storm sewer, electric service, and telecommunications cables) that will be crossed; and a plan for ensuring safe access to businesses by the employees and by the public. (section 3.3.3)
17. **Prior to construction from MP 6.10 to MP 7.80**, Mid-Atlantic Express shall incorporate into the Project Route Variation 1D, as depicted on figure 3.3.3-1B of the EIS. Mid-Atlantic Express shall file with the Secretary updated alignment sheets. In addition, Mid-Atlantic Express shall file final site-specific plans for crossing the developed commercial tracts, including depictions of all roads, parking lots, and utilities (water, sewer, storm sewer, electric service, and telecommunications cables) that will be crossed; and a plan for ensuring safe access to businesses by the employees and by the public. (section 3.3.3)
18. **Prior to construction from MP 5.60 to MP 6.10**, Mid-Atlantic Express shall incorporate into the Project Route Variation 2A, as depicted on figure 3.3.3-1 of the EIS. Mid-Atlantic Express shall file with the Secretary updated alignment sheets. (section 3.3.3)
19. **Prior to construction from MP 36.2 to MP 38.1**, Mid-Atlantic Express shall incorporate into the Project Route Variation 6, as depicted on figure 3.3.3-5 of the EIS. Mid-Atlantic Express shall file with the Secretary updated alignment sheets. (section 3.3.3)
20. Mid-Atlantic Express shall not use Mine Branch Road for construction related activities, including access and the parking of equipment. If an open-cut crossing is planned, the crossing of Mine Branch Road shall be completed within 24 hours. Mid-Atlantic Express shall develop a plan for maintaining access on Mine Branch Road during all phases of construction in the area. (section 3.3.3)
21. **Prior to construction from MP 80.7 to MP 81.8**, Mid-Atlantic Express shall incorporate into the Project Route Variation 10A, as depicted on figure 3.3.3-9A of the EIS. Mid-Atlantic Express shall file with the Secretary updated alignment sheets. Mid-Atlantic Express shall also file with the Secretary for review and written approval by the Director of OEP a site-specific construction and restoration plan for construction through the Downing Forge community. This plan shall address among other things limiting tree clearing and restoration of proper drainage. (section 3.3.3)
22. **Prior to construction**, Mid-Atlantic Express shall consult with Byers Commercial LP to discuss site-specific measures or minor realignments that could be implemented to minimize disruption to the planned development at MP 85.9, as identified in figure 3.3.3-10 of the EIS. Mid-Atlantic

Express shall file the results of this consultation and any revised plans with the Secretary. (section 3.3.3)

23. **Prior to construction from MP 84.05 to MP 85.30** Mid-Atlantic Express shall incorporate into the Project Route Variation 12C, as depicted on figure 3.3.3-12 of the EIS. Mid-Atlantic Express shall file with the Secretary updated alignment sheets. (section 3.3.3)
24. For the Lakeridge WWTF site, Mid-Atlantic Express shall develop, **prior to construction** a plan in consultation with Upper Uwchlan Township and PADEP to reduce/mitigate compaction on the site during and after construction so that the area can be recertified as a community drip field. If the area cannot be recertified, Mid-Atlantic Express shall provide a replacement disposal method for the residents of Lakeridge. The plan and all associated correspondence shall be filed with the Secretary. (section 3.3.3)
25. **Prior to construction of Route Variation 12C, from MP 84.05 to MP 85.30**, Mid-Atlantic Express shall file final site-specific plans for crossing the developed commercial tracts, including depictions of all roads, parking lots, and utilities (water, sewer, storm sewer, electric service, and telecommunications cables) that will be crossed; and a plan for ensuring safe access to businesses by the employees and by the public. (section 3.3.3)
26. **Prior to construction from MP 50.6 to MP 52.4**, Mid-Atlantic Express shall incorporate into the Project Kirks Mill Route Variation A, as depicted on figure 3.3.3-13A of the EIS. Mid-Atlantic Express shall file with the Secretary updated alignment sheets. (section 3.3.3)
27. **Prior to construction of the Kirks Mill Route Variation A**, in the vicinity of the Marker property, Mid-Atlantic Express shall file site-specific mitigation plans, developed in consultation with the affected landowner, with the Secretary for review and written approval by the Director of OEP describing how Mid-Atlantic Express would protect the horses during construction and restoration. Mid-Atlantic Express shall also provide the landowner with a copy of the plan. (section 3.3.3)
28. **Prior to construction from MP 75.84 to MP 76.44**, Mid-Atlantic Express shall incorporate into the Project Romansville Road Route Variation B, as depicted on figure 3.3.3-14. Mid-Atlantic Express shall file with the Secretary updated alignment sheets. (section 3.3.3)
29. **Prior to construction from MP 9.13 to MP 9.41**, Mid-Atlantic Express shall incorporate into the Project the Chesaco Avenue Variation, as depicted on figure 3.3.3-15 of the EIS. Mid-Atlantic Express shall file with the Secretary updated alignment sheets. (section 3.3.3)
30. **Prior to construction from MP 63.69 to MP 64.19**, Mid-Atlantic Express shall incorporate into the Project Route Variation 13, as depicted on figure 3.3.3-16 of the EIS. Mid-Atlantic Express shall file with the Secretary updated alignment sheets. (section 3.3.3)
31. **Prior to construction from MP 82.06 to MP 82.64**, Mid-Atlantic Express shall incorporate into the Project Route Variation 14, as depicted on figure 3.3.3-17 of the EIS. Mid-Atlantic Express shall file with the Secretary updated alignment sheets. (section 3.3.3)
32. **Prior to initiating any blasting activities**, Mid-Atlantic Express shall file a site-specific Project Blasting Plan with the Secretary for the review and written approval of the Director of OEP. (section 4.1.1.2)
33. **Prior to construction**, AES shall file an amended Potentially-Contaminated Soils Management Plan with the Secretary. This amended plan shall be developed in consultation with the appropriate agencies and shall include:
 - a. ranges of detected concentrations of SVOCs, PCBs, and metals;

-
- b. use of an 11.7eV probe photo-ionization detector (or organic vapor monitor with flame ionization detector);
 - c. use of field test kits to detect low concentrations of SVOCs, PCBs, and metals in soils (or laboratory analysis to characterize excavated, segregated or stockpiled soils); and
 - d. a commitment that all soils from areas with documented exceedances shall be handled as contaminated. (section 4.2.1.1)
34. **Prior to crossing the Back River**, Mid-Atlantic Express shall file with the Secretary, for review and written approval by the Director of OEP, a report containing:
- a. the results of sediment quality testing at the location of the Back River crossing for SVOCs, PCBs, and metals (i.e., known contaminants from the 68th Street Dump);
 - b. an assessment of the risk to crossing this waterbody with either HDD or open-cut crossing methods; and
 - c. a site-specific crossing plan for this location that minimizes disturbances of the above-mentioned contaminants for both types of crossing methods.

If historical data are available from this stretch of the river, that are less than 5-years old, these data may be interpreted and the risks assessed from the historical data. (section 4.2.3.8)

35. **Prior to construction**, Mid-Atlantic Express shall file revised table 4.3.1-1 that confirms the location of wells within 150 feet of the construction work areas, including the distance and direction from the construction right-of-way. Any changes in alignment shall be clearly identified on revised alignment sheets. The revised alignment sheets shall be filed with the Secretary for review and written approval by the Director of OEP. (section 4.3.1.1)
36. **Within 30 days of placing the pipeline facilities in service**, Mid-Atlantic Express shall file a report with the Secretary and appropriate water management agencies identifying all water supply wells/systems damaged by construction and how they were repaired. The report shall include a discussion concerning the well yield or quality and how each problem was resolved. It shall also include discussion of any public or private water supply disruptions and how repairs were accomplished and how service was restored. (section 4.3.1.1)
37. **Prior to construction**, AES shall file with the Secretary the final CDP along with any comments from the COE, EPA, or MDE regarding the CDP, for review and written approval by the Director of OEP. (section 4.3.2.5)
38. Mid-Atlantic Express shall cross White Marsh Run (MP 14.38), Winters Run (MP 27.47), Octoraro Creek (MP 56.31), and West Branch Brandywine Creek (MP 74.19) using HDD. **Prior to construction**, Mid-Atlantic Express shall complete geotechnical investigations for the three crossings and file the following with the Secretary for review and approval by the Director of OEP:
- a. final site-specific plans and construction drawings for each of these crossings, including hydrostatic test water sources;
 - b. for the White Marsh Run crossing, a traffic control plan for locating the laydown area across Reames Road; and
 - c. for the Octoraro Creek crossing, documentation that the Chester Water Authority has concurred with the HDD crossing design.
 - d. For the West Branch Brandywine Creek crossing, an assessment of the access (by private road) to the HDD surface workspace to the east of the creek. (section 4.3.2.5)

-
39. **Prior to construction**, Mid-Atlantic Express shall file its final version of the HDD Monitoring and Contingency Plan with the Secretary for review and written approval by the Director of OEP. This plan shall:
 - a. address specific procedures to be followed in the event of a failure of the HDD method at any of the waterbody crossings where HDD is proposed; and
 - b. state that tree clearing between the HDD entrance workspace and the HDD exit workspace would not occur except for hand clearing of a three-foot-wide path for the tracking wires. (section 4.3.2.5)
 40. In the event of an unsuccessful HDD during construction, Mid-Atlantic Express shall file with the Secretary a plan for the crossing of the waterbody. This shall be a site-specific plan that includes scaled drawings identifying all areas that would be disturbed by construction. Mid-Atlantic Express shall file this plan concurrent with the submission of its application to the COE for a permit to construct using this plan. The Director of OEP must review and approve this plan in writing before construction of the crossing. (section 4.3.2.5)
 41. **Prior to construction**, Mid-Atlantic Express shall file with Secretary the results of consultation with the SRBC regarding permits required for water use from the Susquehanna River. (section 4.3.2.5)
 42. **Prior to construction**, Mid-Atlantic Express shall file its final wetland delineations for all proposed facilities including construction workspaces, pipe yards/staging areas, and temporary access roads. (section 4.4.2.1)
 43. **Prior to construction**, AES and Mid-Atlantic Express shall:
 - a. file with the Secretary a final ARMP developed in consultation with the COE, NMFS, FWS, EPA, MDE, and PDEP. The final ARMP shall describe impacts on wetlands, waterbodies, EFH, and other aquatic resources; evaluate potential dredged material placement area sites; and describe specific restoration, mitigation, and monitoring measures; and
 - b. revise its Exotic and Invasive Species Control Plan, ARMP, and ECP to include monitoring the success of all affected wetlands for a period of at least 5 years. If revegetation is not successful after 5 years for a non-forested wetlands and ten years for a forested wetland, a remedial investigation plan should be developed in consultation with a professional wetland ecologist and submitted to the appropriate permitting agencies for review. (section 4.4.4)
 44. Mid-Atlantic Express shall consult with the MDNR Forest Service and/or appropriate local authority(-ies) to develop a FCP and determine the need for a FSD. The FCP shall be submitted to MDNR for review when the sediment and erosion control plan or grading plan is submitted for review. The results of these consultations and the final FCP shall be filed with the Secretary. (section 4.5.2)
 45. **Prior to construction**, Mid-Atlantic Express shall file with the Secretary its finalized Exotic and Invasive Species Control Plan developed in consultation with the COE and other federal and state agencies for the review and written approval by the Director of OEP. (section 4.5.3)
 46. **Prior to construction**, AES shall file with the Secretary, for review and written approval by the Director of OEP, a facility bird strike/impact minimization plan, developed in consultation with FWS and MDNR, and operational procedures established to minimize impacts on birds. This plan shall include, at a minimum, the following:
 - a. that AES downshield all lighting sources in the terminal site, including lighting used during construction activities;

-
- b. that AES paint the LNG storage tanks and the entirety of any structures 150 feet tall or taller above ground level with non-reflective paint; and
 - c. that on any structures 200 feet tall or taller above ground level, AES use the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA, using only white (preferable) or red strobe lights at night, unless otherwise required by the FAA, and employ the minimum number and minimum intensity of flashes per minute (longest duration between flashes) permitted by the FAA. (section 4.6.1.2)
47. **Prior to construction**, AES shall consult with MDNR to develop final best management practices to minimize harm to waterfowl and protect waterfowl habitat within the vicinity of the project area and file with the Secretary the results of the consultation, including any agency-recommended habitat mitigation plans. (section 4.6.1.2)
 48. **Prior to construction**, Mid-Atlantic Express shall consult with the appropriate FIDS habitat management entities in Maryland and file with the Secretary the results of the consultation, including any agency-recommended FIDS habitat mitigation plans. (section 4.6.1.3)
 49. **Prior to construction**, Mid-Atlantic Express shall consult with PGC regarding the State Line Barrens IBA and file the results of this consultation with the Secretary including any PGC-recommended mitigation measures. (section 4.6.1.3)
 50. AES shall continue to consult with the NMFS, MDNR, and ASMFC on the potential for depressed dissolved oxygen in the Patapsco River resulting from its dredging and maintenance of the ship channel, and **prior to construction** file the results of the consultation and any agency-recommended mitigation plan(s) with the Secretary. (section 4.6.2.2)
 51. **Prior to construction**, AES shall consult with MDNR to verify whether the oyster population at Fort Carroll is productive and if so, whether time of year restrictions on dredging activities are needed. The results of these consultations shall be filed with the Secretary. (section 4.6.2.2)
 52. **Prior to construction**, AES shall file a construction plan with the Secretary for the unloading dock developed in consultation with the NMFS and MDNR. The plan shall incorporate NMFS and MDNR comments on the use of existing pilings and any recommended mitigation measures, including pressure and sound wave mitigation. (section 4.6.2.2)
 53. **Prior to construction**, AES shall file with the Secretary its final Vessel Strike Avoidance Plan developed in coordination with NMFS along with documentation of NMFS' concurrence. This plan shall take into account the volume of vessel traffic that would originate outside of the Chesapeake Bay and transit the mouth of the bay, as well as the types, sizes, speeds, routes, and other characteristics of those other vessels. It also shall include information on how AES will ensure that LNG vessels are aware of the latest right whale sightings and the actions it would take to avoid impacts to right whales and other whale species. (section 4.7.1)
 54. **Prior to construction**, AES shall:
 - a. complete its ongoing consultation with the NMFS to determine appropriate seasonal construction windows for sea turtles and file the results of that consultation with the Secretary;
 - b. provide construction and engineering specifications on its proposed dredging to NMFS; and
 - c. finalize its Sea Turtle Monitoring Training Program in consultation with the NMFS and file the NMFS-approved training and monitoring program with the Secretary for review and written approval by the Director of OEP. (section 4.7.1)
 55. **Prior to construction**, AES shall file with the Secretary a NMFS-approved training and monitoring program for shortnose sturgeon that includes dredging specifications, for review and written approval by the Director of OEP. (section 4.7.1)

-
56. **Prior to construction**, Mid-Atlantic Express shall file the following with the Secretary for review and written approval by the Director of OEP:
- a. completed bog turtle survey reports including any Phase II surveys performed during the 2009 bog turtle survey season (April 15 to June 15), surveys at all previously unsurveyed sites with potential bog turtle habitat, and surveys at any sites where FWS recommends resurveying; and
 - b. a bog turtle management plan developed in consultation with FWS, MDNR, and PFBC that includes agency recommended mitigation measures. (section 4.7.1)
57. **Prior to construction**, Mid-Atlantic Express shall continue to consult with FWS and PGC regarding the Indiana bat to develop and file a final survey plan that outlines the site-specific survey parameters and specific locations along the pipeline route, along with a schedule for completing the Indiana bat surveys. Mid-Atlantic Express shall conduct the appropriate Indiana bat surveys and file with the Secretary the results of those surveys, documentation of its consultations with the FWS, and any agency-recommended mitigation plans for review and written approval by the Director of OEP. (section 4.7.1)
58. AES and Mid-Atlantic **shall not begin construction** of the proposed Project facilities until:
- a. the staff completes any necessary consultations with the FWS and NMFS; and
 - b. AES and Mid-Atlantic Express have received written notification from the Director of OEP that construction and/or use of mitigation (including implementation of conservation measures) may begin. (4.7.1.1)
59. **Prior to construction**, Mid-Atlantic Express shall:
- a. conduct an additional nest occupancy survey of the bald eagle nest near MP 44.8 to confirm the presence or absence of nestlings and file the results of that survey with the Secretary, MDNR, and the FWS – these surveys should be conducted during the nesting season immediately prior to construction;
 - b. incorporate the FWS's May 2007 “National Bald Eagle Management Guidelines” into its ECP;
 - c. contact the FWS to determine the appropriate size and shape of buffers, timing of Project related activities, and distance of activities from the bald eagle’s nest; and
- file documentation of any mitigation plans developed in consultation with the FWS with the Secretary for review and written approval by the Director of OEP. (section 4.7.3)
60. **Prior to construction**, Mid-Atlantic Express shall consult with MDNR and FWS to develop mitigation measures to minimize impacts on logperch and file the results of those consultations with the Secretary, including any MDNR and/or FWS recommended mitigation measures. (section 4.7.3)
61. **Prior to construction**, Mid-Atlantic Express shall:
- a. complete surveys for state listed endangered, threatened, rare, and special concern plants and moths between MPs 48.5 and 49 where the landowner has currently denied access; and
 - b. file with the Secretary documentation of its state-listed plant and moth species consultations with the MDNR and PDCNR, and mitigation plans developed in consultation with the MDNR and the PDCNR regarding these species. Documentation of consultation and mitigation plans shall also address the eastern serpentine barrens crossed by the proposed pipeline route along the Maryland/Pennsylvania border. (section 4.7.3)

-
62. **Prior to construction**, AES shall continue consultation with FWS Virginia Field Office regarding the potential presence of the northeastern beach tiger beetle and bald eagle along the vessel transit route or within the “Zones of Concern” and file the results with the Secretary. (section 4.7.3)
 63. For any residence which requires a site-specific plan, Mid-Atlantic Express shall complete all construction related activities (clearing through restoration) within a week on any property, weather permitting. Once a property is restored it shall not be used as a travel lane. (section 4.8.1.1)
 64. For each residence which requires a site-specific plan, Mid-Atlantic Express shall offer to monitor the foundation of every permanent structure within 50 feet of the construction work area for damage from construction. (section 4.8.1.1)
 65. **Prior to construction**, Mid-Atlantic Express shall provide individual site-specific residential plans to the owner of each residence located within 50 feet of construction work areas and provide the owner one month to review and comment on these plans. Mid-Atlantic Express shall file these plans along with any comments from the property owner(s) with the Secretary for review and written approval by the Director of OEP. Mid-Atlantic Express shall identify how it would keep residents informed of the progress of construction in the vicinity of their respective residences and provide evidence of landowner concurrence if construction areas would be located within 10 feet of a residence. The site-specific residential plans shall include:

- a. a dimensioned site plan that clearly shows:
 - i. The location of the residence in relation to the new pipeline and any existing pipelines and/or other utilities (including water and sewer lines and septic systems);
 - ii. The boundaries of all permanent and temporary construction work areas;
 - iii. Other nearby structures and residential features (including decks, pools, swings, fences, driveways, etc); indicating, which would be removed and any areas with restrictions after construction;
 - iv. Trees and other landscaping; indicating which would be removed and where trees would not be allowed after construction;
 - v. The location of topsoil and subsoil storage piles;
 - vi. Equipment travel lanes;
 - vii. Safety fencing and other safety features; and
 - viii. The distances between construction work areas and permanent structures.
- b. a detailed description of the construction techniques that will be used (such as reduced pipeline separation, centerline adjustment, use of stove-pipe or drag-section techniques, working over existing pipelines, pipeline crossover, bore, utility crossing, etc.);
- c. an estimation of the amount of time required for construction;
- d. a description of restoration and revegetation measures and procedures for the property; and
- e. a detailed description of the measures it will implement to ensure the public safety during construction activities; and minimize and mitigate impacts from dust, noise, and vibration.

Mid-Atlantic Express shall not exercise eminent domain authority granted under section 7(h) of the Natural Gas Act to acquire permanent rights-of-way on these properties until the required site-specific residential construction plans have been reviewed and approved by the Director of OEP. (section 4.8.1.1)

-
66. **Prior to construction**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP, a Residential Access and Traffic Mitigation Plan that identifies potential road closures, and measures that Mid-Atlantic Express would implement to minimize construction traffic impacts on affected residents. This plan shall identify procedures for notifying residents about planned road closures and disturbances. This plan shall specifically address the subdivisions crossed by the Project. (section 4.8.1.1)
 67. **Prior to construction**, Mid-Atlantic Express shall continue to consult with the Victoria Crossing at Bradford Glen HOA and file with the Secretary for review and written approval of the Director of OEP evidence of this consultation and all drawings or plans regarding:
 - a. replanting of trees damaged by construction or removed from the temporary work areas within the HOA common areas;
 - b. specifics about native tree and shrub species to be used in the restoration of HOA common areas; and
 - c. tree and shrub density to be used in the restoration and the monitoring of success in this restoration. (section 4.8.1.1)
 68. **Prior to construction**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP, a Septic System Contingency Plan describing steps it would take to avoid disturbance to septic systems crossed by the pipeline; mitigate for damage to septic systems; and restore/replace the septic system. Any temporary repair/mitigation shall take into account all waste water that would normally be handled by the septic system. This plan shall also discuss any proposed mitigation if the septic system must be relocated. The plan shall be developed through consultation with the local planning commissions. (section 4.8.1.1)
 69. **Prior to construction**, Mid-Atlantic Express shall develop and implement a site-specific plan for crossing the Chester Water Authority mains based on updated as-built plans from the Chester Water Authority and file this plan with the Secretary. (section 4.8.1.1)
 70. **Within 30 days of placing the pipeline facilities in service**, Mid-Atlantic Express shall file a report with the Secretary identifying all utilities including water supply systems, sewer lines, electrical service, or communication cables damaged by construction and how they were repaired. The report shall include a discussion concerning how each problem was resolved. It shall also include discussion of any utility disruption and a description of steps taken to restore the utility to preconstruction conditions or better. (section 4.8.1.1)
 71. **Prior to construction**, Mid-Atlantic Express shall identify any new residences (i.e., not listed in Appendix F of the EIS) located within 50 feet of the construction work areas (i.e., construction right-of-way and extra temporary work space) and file this information in its initial Implementation Plan. For all residences that would be 50 feet or closer to the construction work area, Mid-Atlantic Express shall file a site-specific plan with the Secretary for review and written approval of the Director of OEP. (section 4.8.1.1)
 72. **Prior to construction between MP 18.2 and MP 18.4**, Mid-Atlantic Express shall file with the Secretary for review and written approval a detailed site-specific plan developed in consultation with the MDNR for the first crossing of Gunpowder Falls State Park. This plan shall include:
 - a. a scaled detailed diagram of the crossing indicating the areas to be disturbed, the permanent right-of-way, and storage areas for spoil;
 - b. a detailed explanation, with diagrams, of the construction method including equipment that would be used and the duration of the crossing;
 - c. a refueling plan for equipment;

-
- d. a detailed plan for trench dewatering;
 - e. a site-specific blasting plan, if required;
 - f. a detailed restoration/revegetation plan including a diagram showing areas where trees would be removed and would not be allowed after construction;
 - g. a representation of the viewshed from the trail after construction;
 - h. a detailed plan for maintaining public access and safety along the trail and any restrictions to water-related activities during construction; and
 - i. any comments from the MDNR and additional state timing/construction restrictions. (section 4.8.1.2)
73. **Prior to construction between MP 22.06 and MP 22.78**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP a detailed site-specific plan developed in consultation with the MDNR for the second crossing of Gunpowder Falls State Park. This plan shall include:
- a. a scaled detailed diagram of the crossing indicating the areas to be disturbed, the permanent right-of-way, and storage areas for spoil;
 - b. a detailed restoration/revegetation plan including a diagram showing areas where trees would be removed and would not be allowed after construction;
 - c. a representation of the viewshed from the trail after construction;
 - d. a site-specific frac-out plan, including patrolling the path of the drill on a regular basis;
 - e. a commitment for no tree clearing between the HDD entrance workspace and the HDD exit workspace except for hand clearing of a three-foot-wide path for the tracking wires; and
 - f. any comments from the MDNR and additional state timing/construction restrictions. (section 4.8.1.2)
74. **Prior to construction in the park**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP a detailed site-specific plan for crossing Batavia Park. This plan shall include:
- a. a scaled detailed diagram of the crossing indicating the areas to be disturbed, the permanent right-of-way, and storage areas for spoil;
 - b. a detailed explanation, with diagrams, of the construction method including equipment that would be used and the duration of the crossing;
 - c. a detailed restoration/revegetation plan including a diagram showing areas where trees would be removed and would not be allowed after construction;
 - d. a representation of the viewshed from the park after construction;
 - e. a detailed plan for maintaining public access and safety in the park; and
 - f. comments from the park administration. (section 4.8.1.2)
75. **Prior to construction in the park**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP a detailed site-specific plan for crossing Race Road Park. This plan shall include:
- a. a scaled detailed diagram of the crossing indicating the areas to be disturbed, the permanent right-of-way, and storage areas for spoil;

-
- b. a detailed explanation, with diagrams, of the construction method including equipment that would be used and the duration of the crossing;
 - c. a detailed restoration/revegetation plan including a diagram showing areas where trees would be removed and would not be allowed after construction;
 - d. a representation of the viewshed from the park after construction;
 - e. a detailed plan for maintaining public access and safety in the park; and
 - f. comments from the park administration. (section 4.8.1.2)
76. **Prior to construction in the park**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP a detailed site-specific plan for crossing Beacon Hill Park. This plan shall include:
- a. a scaled detailed diagram of the crossing indicating the areas to be disturbed, the permanent right-of-way, and storage areas for spoil;
 - b. a detailed explanation, with diagrams, of the construction method including equipment that would be used and the duration of the crossing;
 - c. a detailed restoration/revegetation plan including a diagram showing areas where trees would be removed and would not be allowed after construction;
 - d. a representation of the viewshed from the park after construction;
 - e. a detailed plan for maintaining public access and safety in the park; and
 - f. comments from the park administration. (section 4.8.1.2)
77. **Prior to construction in the park**, Mid-Atlantic Express shall file its final plan for crossing Dowlin Struble Forge Park. This plan shall be developed through continuing consultation with Uwchlan Township and the CCPRD, and include minimization of tree clearing, avoidance and/or minimization of conflict with park use, park user safety issues, and specific restoration and revegetation plans. The plan shall provide for continuous use of park trails, including detours where necessary. The final plan for crossing the park, along with Uwchlan Township and park administration correspondence, shall be filed with the Secretary for review and written approval by the Director of OEP. (section 4.8.1.2)
78. **Prior to construction in the park**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP a detailed site-specific plan for crossing Hickory Park. This plan shall include:
- a. a scaled detailed diagram of the crossing indicating the areas to be disturbed, the permanent right-of-way, and storage areas for spoil;
 - b. a detailed explanation, with diagrams, of the construction method including equipment that would be used and the duration of the crossing;
 - c. a detailed restoration/revegetation plan including a diagram showing areas where trees would be removed and would not be allowed after construction;
 - d. a representation of the viewshed from the park after construction;
 - e. a detailed plan for maintaining public access and safety in the park; and
 - f. comments from the park administration. (section 4.8.1.2)

-
79. **Prior to construction in the park**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP a detailed site-specific plan for crossing West Bradford Township land at MP 77.75. This plan shall include:
- a. a scaled detailed diagram of the crossing indicating the areas to be disturbed, the permanent right-of-way, and storage areas for spoil;
 - b. a detailed explanation, with diagrams, of the construction method including equipment that would be used and the duration of the crossing;
 - c. a detailed plan for maintaining public access and safety in the park; and
 - d. comments from the park administration. (section 4.8.1.2)
80. **Prior to construction in the camp**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP detailed site-specific final plans for the HDD crossing of the Susquehanna River and related activities on Indian Lake Christian Service Camp property, along with documentation of the results of consultations with the camp officials. These plans should include:
- a. a detailed restoration/revegetation plan including a diagram showing areas where trees would be removed and would not be allowed after construction;
 - b. a representation of the viewshed from the river and camp after construction;
 - c. a site-specific frac-out plan, including patrolling the path of the drill on a regular basis;
 - d. a commitment for no tree clearing between the HDD entrance workspace and the HDD exit workspace except for hand clearing of a three-foot-wide path for the tracking wires;
 - e. scheduling of construction activities around camp activities;
 - f. measures to protect camper safety; and
 - g. any comments from the MDNR and the camp officials and additional state timing/construction restrictions. (section 4.8.1.2)
81. **Prior to construction in the camp**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP detailed site-specific final plans for the HDD crossing of the Susquehanna River and related activities on Camp Conowingo property, along with documentation of the results of consultations with the Girl Scouts of Central Maryland. These plans shall include:
- a. a detailed restoration/revegetation plan including a diagram showing areas where trees would be removed and would not be allowed after construction;
 - b. a representation of the viewshed from the river and camp after construction;
 - c. a site-specific frac-out plan, including patrolling the path of the drill on a regular basis;
 - d. commitment for no tree clearing between the HDD entrance workspace and the HDD exit workspace except for hand clearing of a three-foot-wide path for the tracking wires;
 - e. scheduling of construction activities around Camp activities;
 - f. measures to protect camper safety;
 - g. security measures to protect the Bell Manor facilities from potential adverse affects; and
 - h. any comments from the MDNR and the Girl Scouts of Central Maryland and additional state timing/construction restrictions. (section 4.8.1.2)

-
82. Mid-Atlantic Express shall not store materials (including pipe) at Camp Conowingo except during the period of active construction on the camp property. (section 4.8.1.2)
 83. **Prior to construction in the camp**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP a detailed site-specific plan for crossing and minimizing impacts to activities and facilities at Camp Tweedale. This plan shall include:
 - a. a scaled detailed diagram of the crossing indicating the areas to be disturbed, the permanent right-of-way, and storage areas for spoil;
 - b. a detailed explanation, with diagrams, of the construction method including equipment that would be used and the duration of the crossing;
 - c. a detailed restoration/revegetation plan including a diagram showing areas where trees would be removed and would not be allowed after construction;
 - d. a representation of the viewshed from the camp after construction;
 - e. scheduling of construction activities around camp activities;
 - f. measures to protect camper safety; and
 - g. any comments from the Girl Scouts of Eastern Pennsylvania. (section 4.8.1.2)
 84. **Prior to any blasting within 5 miles of the Marsh Creek State Park and dam**, Mid-Atlantic Express shall provide at least 72 hours notice of the impending blasting to the Park Manager. (section 4.8.1.2)
 85. **Prior to start of the HDD for the Susquehanna River**, Mid-Atlantic Express shall develop and file with the Secretary a plan to allow safe passage for users along the Mason-Dixon Trail during the HDD operation. (section 4.8.1.2)
 86. **Prior to construction across the trail**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP a detailed site-specific plan for crossing the Brandywine Trail. This plan shall include:
 - a. a scaled detailed diagram of the crossing indicating the areas to be disturbed, the permanent right-of-way, and storage areas for spoil;
 - b. a detailed explanation, with diagrams, of the construction method including equipment that would be used and the duration of the crossing;
 - c. a construction schedule that would avoid the annual Brandywine Trail End-to-End Hike;
 - d. a detailed restoration/revegetation plan including a diagram showing areas where trees would be removed and would not be allowed after construction;
 - e. a representation of the viewshed from the trail after construction;
 - f. a detailed plan for maintaining public access and safety along the trail; and
 - g. any comments from the Wilmington Trail Club. (section 4.8.1.2)
 87. **Prior to construction across the Uwchlan Township Walking path**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP a detailed site-specific plan for crossing the path. This plan shall include:
 - a. a scaled detailed diagram of the crossing indicating the areas to be disturbed, the permanent right-of-way, and storage areas for spoil;
 - b. a detailed explanation, with diagrams, of the construction method including equipment that would be used and the duration of the crossing;

-
- c. a detailed restoration/revegetation plan including a diagram showing areas where trees would be removed and would not be allowed after construction;
 - d. a representation of the viewshed from the path after construction;
 - e. a detailed plan for maintaining public access and safety along the path; and
 - f. any comments from the Uwchlan Township. (section 4.8.1.2)
88. **Prior to construction at the golf course**, Mid-Atlantic Express shall develop and file with the Secretary, a detailed site-specific plan for crossing the Gunpowder Falls Golf Course at MP 19.05. This plan shall include:
- a. a scaled detailed diagram of the crossing indicating the areas to be disturbed, the permanent right-of-way, and storage areas for spoil;
 - b. a detailed explanation, with diagrams, of the construction method including equipment that would be used and the duration of the crossing;
 - c. a detailed restoration/revegetation plan including a diagram showing areas where trees would be removed and would not be allowed after construction;
 - d. a representation of the viewshed from the golf course after construction; a
 - e. a detailed plan for maintaining access and safety along the course;
 - f. scheduling of construction activities to limit impacts to golfers; and
 - g. any comments from the Gunpowder Falls Golf Course. (section 4.8.1.2)
89. **Prior to construction**, Mid-Atlantic Express shall file a detailed site-specific plan, developed in consultation with the school administrator, for each school listed in table 4.8.1-3 of the EIS as “crossed or adjacent.” The plans shall include provisions to:
- a. mitigate construction noise if construction occurs during regular school hours;
 - b. provide security for equipment left on school property overnight ;
 - c. backfill or cover open trenches on school property at night or on days construction is shut down;
 - d. schedule construction to minimize disruption to school activities; and
 - e. provide comment from school administrators. (section 4.8.1.2)
90. **Prior to construction on the Humane Society of Harford County land**, Mid-Atlantic Express shall file site-specific mitigation plans, developed in consultation with the Humane Society with the Secretary for review and written approval by the Director of OEP describing how it would protect the shelter animals and maintain public access during construction and restoration. (section 4.8.1.2)
91. **Prior to construction across Deer Creek**, Mid-Atlantic Express shall develop, in consultation with the Deer Creek Advisory Board, the NMFS and the MDNR, a construction and mitigation plan for Deer Creek to address minimizing tree clearing, potential fisheries impacts, the method of construction, and effects on the scenic river status. Mid-Atlantic Express shall file the plan with the Secretary for review and written approval by the Director of OEP. (section 4.8.1.2)
92. **Prior to construction**, Mid-Atlantic Express shall develop, in consultation with the PDCNR, the Octoraro Creek Watershed Association, CCPRD, PFBC, and the Brandywine Conservancy, construction and mitigation plans for the Octoraro Creek (MP 56.3) and each of the four crossings

of the Brandywine Creek system (i.e., MPs 72.14, 74.25, 76.54, and 82.31) and file the plans with the Secretary for review and written approval by the Director of OEP. These plans shall address:

- a. minimizing tree clearing within the riparian zones of the waterbodies;
 - b. potential measures to ensure safety and reduce impacts to recreational users, including fishermen and boaters, ensure boating access during construction, including measures to provide a means for boaters to bypass the immediate construction area, and provide for notification to users regarding construction activities; and
 - c. effects on the viewshed along these Scenic Rivers. (section 4.8.1.2)
93. **Prior to construction**, Mid-Atlantic Express shall identify all properties with conservation easements. Mid-Atlantic Express shall identify the type of conservation easement and consult with landowners to develop measures to mitigate impacts on protected resources. Mid-Atlantic Express shall file a summary of the results of the consultation. (section 4.8.1.3)
94. **Prior to construction**, Mid-Atlantic Express shall develop an AIMP in consultation with the state and county agricultural agencies. Mid-Atlantic Express shall file the AIMP with the Secretary along with copies of all related correspondence from these agencies. The AIMP shall at a minimum include provisions for:
- a. at least one agricultural inspector for the Project;
 - b. top soil segregation indicating the depth of segregation and allowing the landowner the choice of trench plus working side or full right-of-way;
 - c. identification and marking of drain tiles including providing the landowner and tenant with the location of the drain tiles;
 - d. depth of cover to avoid interference with drain tiles;
 - e. repair (temporary and permanent) of drain tiles by a qualified local drain tile expert;
 - f. replacement/additional drain tile installation in areas where drainage is adversely affected by construction of the pipeline;
 - g. rock and debris removal;
 - h. restoration methods for compaction and rutting;
 - i. land leveling;
 - j. backfill profile and trench crowning;
 - k. erosion control
 - l. repair of damaged soil conservation practices;
 - m. control of trench washouts, water piping, and blowouts;
 - n. interference with irrigation systems;
 - o. access through fields;
 - p. weed control;
 - q. trench dewatering;
 - r. advanced notice of access; and
 - s. monitoring and remediation, including the length of post-restoration crop monitoring. (section 4.8.1.3)

-
95. **Prior to construction in the vicinity of MP 67.3 and MP 78.3**, Mid-Atlantic Express shall file site-specific mitigation plans, developed in consultation with the affected landowners with the Secretary for review and written approval by the Director of OEP describing the measures Mid-Atlantic Express would implement to minimize impact on the horses during construction and restoration. Mid-Atlantic Express shall also provide the landowners with a copy of the plan. (section 4.8.1.3)
 96. AES and Mid-Atlantic Express shall consult with appropriate state/local agencies regarding Maryland-designated Critical Areas and any mitigation plans to be implemented during the construction and operation of the Project. AES and Mid-Atlantic Express shall file copies of correspondence and any resulting mitigation plans with the Secretary. (section 4.8.3.2)
 97. **Prior to construction**, Mid-Atlantic Express shall develop in consultation with the appropriate agency and file with the Secretary for review and written approval by the Director of OEP site-specific plans for each crossing of the Gunpowder Crossing Scenic Byway that include details regarding the types of vegetation to be removed and plans to minimize any necessary expansion of the width of the crossing area to be cleared and maintained. (section 4.8.5.2)
 98. **Prior to construction**, AES shall continue consultation with Severstal Steel and other major employers at Sparrows Point and shall prepare and file with the Secretary a final Construction Traffic Management Plan that addresses and minimizes potential problems with worker access to other employment centers of the Sparrows Point industrial complex. The Plan shall address total vehicular traffic at the construction site, volume of traffic from other employers and schedule of shift changes, and describe potential restrictions of construction traffic during shift changes, as necessary. The final plan shall be updated to address any changes in traffic conditions since the draft plan was developed. (section 4.9.4.1)
 99. **Prior to construction**, Mid-Atlantic Express shall work with the appropriate authorities to develop site-specific traffic and safety plans wherever road closures or restrictions may be required. These plans and documentation of consultation with appropriate authorities shall be filed with the Secretary. (section 4.9.4.1)
 100. **Prior to construction**, AES shall continue its discussions with the Port of Baltimore and other major shipping and commercial and recreational fishing interests along the marine transit route and develop specific operational and communication guidelines for LNG vessels. These guidelines shall address any concerns raised regarding impacts to shipping and fishing interests including the effects on marine traffic and congestion along the transit route and within the Port of Baltimore. These guidelines shall take into account the recommendations provided in the WSA and WSR and be filed with the Secretary. (section 4.9.4.2)
 101. Mid-Atlantic Express shall not construct the pipeline facilities **until**:
 - a. Mid-Atlantic Express files with the Secretary the results of the historic architecture field investigations along the proposed pipeline route and the comments of the appropriate SHPO for review and written approval by the Director of OEP;
 - b. Mid-Atlantic Express completes the outstanding cultural resources surveys of the pipeline corridor and ancillary use areas;
 - c. Mid-Atlantic Express files with the Secretary all additional required cultural resources survey reports and any treatment plans, and the Maryland SHPO's and Pennsylvania SHPO's comments on all reports and plans including comments regarding the pipeline crossing of the Lower Deer Creek Valley Historic District, Doe's Run Historic District, and Kirks Mills Historic District, John Hanna Farm, Fairview School, and Mortonville Bridge, to identify any appropriate mitigative measures that would protect these NRHP-listed resources from pipeline installation and operation; and

-
- d. the Director of OEP reviews and approves all cultural resources reports and plans, and notifies Mid-Atlantic Express in writing that it may proceed with treatment measures or construction.

102. AES shall not construct or begin demolition activities at the Sparrows Point Shipyard Historic District **until** it files with the Secretary all additional required cultural resources reports, treatment plans, and progress reports, and the Maryland SHPO's comments on all reports and plans, and the Director of OEP reviews and approves all cultural resources reports and plans, and notifies AES in writing that it may proceed with treatment measures or construction or demolition activities. (section 4.10.4)

All material filed with the Secretary containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE."

103. **Prior to construction of the respective Project components**, AES and Mid-Atlantic Express shall prepare and file a Fugitive Dust Control Plan with the Secretary for review and written approval of the Director of OEP that specifies when/how the following measures would be applied:

- a. require contractors to meet all air quality requirements and employ equipment that meets relevant emission standards;
- b. apply water or dust suppressants to disturbed areas;
- c. cover open hauling trucks as needed;
- d. use paved roads when practical;
- e. limit vehicle speeds; and
- f. stabilize disturbed areas upon completion of construction. (section 4.11.1.4)

104. **Prior to construction, AES and Mid-Atlantic Express shall file:**

- a. submit the following information for the issuance of a final General Conformity Determination:
 - (1) updated documentation showing a more specific range of the availability of NO_x and/or VOC offsets to comply with General Conformity requirements in Maryland;
 - (2) documentation from the PDEP demonstrating that the total of the direct and indirect emissions from the portion of the proposed action to which the general conformity review applies, together with all other emissions in the nonattainment area, would not exceed the emissions budgets specified in the approved SIP;
- b. provide a record of NO_x and/or VOC offsets obtained and demonstrate that this amount is equal to the amount required under the final General Conformity Determination; and
- c. obtain and submit letters from MDE and EPA concurring that offset requirements for the project have been met. (section 4.11.1.5)

105. **Prior to construction**, Mid-Atlantic Express shall file with the Secretary for review and written approval by the Director of OEP a noise analysis for the White Marsh Run, Winters Run, Octoraro Creek, and West Branch Brandywine Creek HDD crossings. This analysis shall identify any NSAs within one-half mile of the HDD entry or exit location and the proposed length of time HDD activities would occur. The analysis shall also include background noise levels and estimated drilling noise contributions at the nearest NSAs at each HDD entry and exit location

with NSAs within one-half mile, along with any measures Mid-Atlantic Express would implement to control noise from the HDDs. (4.11.2.3)

106. AES shall make all reasonable efforts to ensure its predicted noise levels from the LNG terminal and power plant are not exceeded at the nearest NSAs and file noise surveys with the Secretary **no later than 60 days after placing the LNG terminal in service**. However, if the noise attributable to the operation of the LNG terminal and optional power plant exceeds 55 dBA Ldn at any NSA, AES shall file a report on what changes are needed and shall install additional noise controls to meet the level **within 1 year** of the in-service date. AES shall confirm compliance with these requirements by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls. (section 4.11.2.3)
107. **Until commencement of service**, AES shall **annually** review its WSA relating to LNG marine traffic for the Project; update the assessment to reflect changing conditions which may impact the suitability of the waterway for LNG marine traffic; provide the updated assessment to the cognizant Captain of the Port/Federal Maritime Security Coordinator for review and validation and if appropriate, further action by the Captain of the Port/Federal Maritime Security Coordinator relating to LNG marine traffic; and provide a copy to FERC staff. (section 4.12.5.5)

Recommendation numbers 108 through 118 shall apply to the AES Sparrows Point LNG terminal design and construction details. Information pertaining to these specific recommendations shall be filed with the Secretary for review and written approval by the Director of OEP either: prior to initial site preparation; prior to final design; prior to construction [of the subject facility component(s)]; or prior to commissioning as indicated by each specific condition. All detailed design documents (drawings, calculations, specifications, etc.) and design submittals shall satisfy the requirements of Section 4, Part II of the FERC’s draft “Seismic Design Guidelines and Data Submittal Requirements for LNG Facilities”, January 2007 (draft Seismic Design Guidelines). This information shall be filed a minimum of 30 days before approval to proceed is requested.

108. AES shall perform at least one additional boring and two additional CPTs to a depth of at least 75 feet at the location of each tank and provide the resulting new geotechnical test data **prior to construction**. The CPTs shall not be predrilled. The purpose of these additional tests is to provide definitive data on the liquefaction potential present at the site. (section 4.1.1.1)
109. AES shall perform shear wave velocity measurements at the site to a depth of at least 200 feet determined by actual geophysical tests and provide the resulting shear wave velocity measurement data **prior to construction**. (section 4.1.1.1)
110. Using the additional boring, CPT, and shear wave velocity data and the peak ground acceleration for the SSE of 0.15 g, AES shall provide revised liquefaction calculations using the procedures outlined in Youd and Idriss (2001) **prior to construction**. (section 4.1.1.1)
111. If it is determined in response to Recommendation 110 that the soils will liquefy, AES shall provide the following **prior to construction**:
 - a. calculations and estimates of liquefaction associated settlements and pile down drag loads;
 - b. details of the liquefaction mitigation method(s) procedures, plan extent, and verification methods proposed to verify mitigation of liquefaction potential; and
 - c. detailed calculations of seismic slope stability and lateral movements anticipated after the liquefaction mitigation is implemented to verify the stability of critical structures for the Project design earthquake motions. (section 4.1.1.1)

-
112. AES's LNG tank and foundation final design shall comply with Part I of the draft Seismic Guidelines. Submittals that demonstrate compliance shall be provided **prior to initial site preparation** after the final pile design has been selected. Details of the types of piles finally selected for supporting the LNG tanks and results of indicator pile program, including load tests, shall be submitted for review and approval **prior to construction/pile installation**. (section 4.1.1.1)
 113. The Quality Control and Assurance procedures, as described in section 3.11 of Part II of the draft Seismic Design Guidelines, that AES will use for design shall be submitted for review **prior to construction**. (section 4.1.1.1)
 114. **Prior to final design**, AES shall submit seismic specifications to be used in conjunction with the procuring equipment as described in section 3.10 of Part II of the draft Seismic Design Guidelines. (section 4.1.1.1)
 115. **Prior to construction**, AES shall submit all other items identified in the filed geotechnical/seismic reports that were proposed to be addressed during the detailed design. (section 4.1.1.1)
 116. **Prior to construction**, AES shall submit final foundation design recommendations including pile foundation design and/or liquefaction mitigation (if it is determined that soils will liquefy) measures for all other structures. (section 4.1.1.1)
 117. AES shall provide a seismic instrumentation plan as described in section 3.12 of Part II of the FERC's draft Seismic Design Guidelines **prior to commissioning**. (section 4.1.1.1)
 118. AES shall provide the results of the hydrostatic load tests on the LNG storage tanks, including settlement data as described in section 7.4.1 of the FERC's draft Seismic Design Guidelines **prior to commissioning**. (section 4.1.1.1)

The following measures (119 through 173) shall apply to the AES Sparrows Point LNG terminal. Information pertaining to these specific recommendations shall be filed with the Secretary for review and written approval by the Director of OEP either: prior to initial site preparation; prior to construction of final design; prior to commissioning; or prior to commencement of service, as indicated by each specific condition. Specific engineering, vulnerability, or detailed design information meeting the criteria specified in Order No. 683 (Docket No. RM06-24-000), including security information, shall be submitted as critical energy infrastructure information (CEII) pursuant to 18 CFR 388.112. See Critical Energy Infrastructure Information, Order No. 683, 71 Fed. Reg. 58,273 (October 3, 2006), FERC Stats. & Regs. ¶ 31,228 (2006). Information pertaining to items such as: offsite emergency response; procedures for public notification and evacuation; and construction and operating reporting requirements would be subject to public disclosure. All information shall be filed a minimum of 30 days before approval to proceed is requested.

119. **Prior to initial site preparation**, AES shall file finalized documentation of the lease agreement which demonstrates that the exclusion zones extending offsite comply with 49 CFR 193.2057 and 193.2007. (section 4.12.4)
120. AES shall develop an ERP (including evacuation) and coordinate procedures with the Coast Guard; state, county, and local emergency planning groups; fire departments; state and local law enforcement; and appropriate federal agencies. This plan shall include at a minimum:
 - a. designated contacts with state and local emergency response agencies;

-
- b. scalable procedures for the prompt notification of appropriate local officials and emergency response agencies based on the level and severity of potential incidents;
 - c. procedures for notifying residents and recreational users within areas of potential hazard along the transit route;
 - d. evacuation routes/methods for residents and other public use areas that are within any transient hazard areas along the transit route of the LNG marine traffic;
 - e. locations of permanent sirens and other warning devices; and
 - f. an “emergency coordinator” on each LNG vessel to activate sirens and other warning devices.

The ERP shall be filed with the Secretary for review and written approval by the Director of OEP **prior to initial site preparation**. AES shall notify FERC staff of all planning meetings in advance and should report progress on the development of its ERP at **3-month intervals**. (section 4.12.6)

121. The ERP shall include a Cost-Sharing Plan identifying the mechanisms for funding all Project-specific security/emergency management costs that would be imposed on state and local agencies. In addition to the funding of direct transit-related security/emergency management costs, this comprehensive plan shall include funding mechanisms for the capital costs associated with any necessary security/emergency management equipment and personnel base. The Cost-Sharing Plan shall be filed with the Secretary for review and written approval by the Director of OEP **prior to initial site preparation**. (section 4.12.6)
122. Complete plan drawings and a list of the hazard detection equipment shall be filed **prior to initial site preparation**. The list shall include the instrument tag number, type and location, alarm locations, and shutdown functions of the proposed hazard detection equipment. Plan drawings shall clearly show the location of all detection equipment. (section 4.12.2)
123. AES shall provide a technical review of its proposed facility that:
 - a. identifies all combustion/ventilation air intake equipment and the distances to any possible hydrocarbon release (LNG, flammable refrigerants, flammable liquids and flammable gases); and
 - b. demonstrates that these areas are adequately covered by hazard detection devices and indicates how these devices would isolate or shutdown any combustion equipment whose continued operation could add to or sustain an emergency.

AES shall file this review **prior to initial site preparation**. (section 4.12.2)

124. Complete plan drawings and a list of the fixed and wheeled dry-chemical, fire extinguishing, and other hazard control equipment shall be filed **prior to initial site preparation**. The list shall include the equipment tag number, type, size, equipment covered, and automatic and manual remote signals initiating discharge of the units. Plan drawings shall clearly show the planned location of all fixed and wheeled extinguishers. (section 4.12.2)
125. Facility plans showing the proposed location of, and area covered by, each monitor, hydrant, deluge system, hose, and sprinkler, as well as piping and instrumentation diagrams, of the fire water system shall be filed **prior to initial site preparation**. (section 4.12.2)
126. A copy of the hazard design review and list of recommendations that are to be incorporated in the final facility design shall be filed **prior to initial site preparation**. (section 4.12.2)
127. A complete specification of the proposed LNG tank design and installation shall be provided **prior to initial site preparation**. (section 4.12.2)

-
128. Drawings of the storage tank piping support structure and support of horizontal piping at grade shall be filed **prior to initial site preparation**. (section 4.12.2)
 129. AES shall provide information/revisions related to the 31 responses to the April 23, 2007 Engineering Information Request which stated that corrections or modifications would be made to the design. The **final design** shall specifically address response numbers 3, 12, 13, 25, 26, 36, 38, 42, 50, 51, 52, 58, 67, 70, 72, 73, 79, 80, 81, 83, 88, 91, 92, 94, 96, 97, 102, 103, 104, and 108 using management of change procedures. (section 4.12.2)
 130. The **final design** of the fixed and wheeled dry-chemical, fire extinguishing hazard control equipment shall identify manufacturer and model. (section 4.12.2)
 131. The **final design** shall include an updated fire protection evaluation carried out in accordance with the requirements of NFPA 59A 2001, chapter 9.1.2. (section 4.12.2)
 132. The **final design** shall specify that the design pressure of sendout equipment containing LNG in low pressure service shall be not less than the design pressure of the piping system. (section 4.12.2)
 133. The **final design** shall specify that LNG relief valves and LNG drains shall not discharge into the vapor system. (section 4.12.2)
 134. The **final design** shall specify that LNG from relief valves and drains is to be returned to storage. (section 4.12.2)
 135. The **final design** of the vapor return system shall include provisions for the addition of LNG transfer pumps to the Platform Drum D-104. The vapor inlet piping to the drum shall be designed to insure that all LNG, from the desuperheater and LNG piping discharging to the drum, cannot back flow to the vapor return piping. (section 4.12.2)
 136. The **final design** shall specify that the vapor inlet piping to the BOG drum shall be designed to insure that all LNG, from the desuperheater and LNG piping discharging to the drum, cannot back flow to the vapor return piping. (section 4.12.2)
 137. The **final design** shall include provisions for the future installation of LNG pumps for the BOG drum. (section 4.12.2)
 138. The **final design** shall specify that the Low Point Drain Drum is to be equipped to remove residual liquids without personnel accessing the spill containment sump. (section 4.12.2)
 139. The **final design** of the Low Point Drain Drum shall include a pressure relief system to protect the vessel in the event of isolation. (section 4.12.2)
 140. The **final design** of the boiloff condenser system shall include a relief valve between the vapor inlet check valve and the fail closed LNG outlet control valve. (section 4.12.2)
 141. The **final design** shall include provisions to recycle the boiloff compressor discharge upstream of the BOG drum desuperheater. (section 4.12.2)
 142. The **final design** shall include bypass valves around the intank pump ESD2 discharge valves for cooldown of the discharge headers and piping. (section 4.12.2)
 143. The **final design** shall include a shutoff valve at the suction and discharge of each HP pump. (section 4.12.2)
 144. The **final design** shall specify that the minimum flow recycle line from the HP LNG pumps to downstream of the isolation valve to the LNG storage tanks shall be the same pressure and temperature rating as the piping at the discharge of the HP LNG pumps. (section 4.12.2)

-
145. The **final design** shall include a pilot relief valve or operated vent valve sized for thermal relief and located upstream of the isolation valves at the discharge of each vaporizer. (section 4.12.2)
 146. The **final design** shall include provisions to prevent freezing conditions occurring in idle vaporizers during normal shutdown, emergency shutdown and extended power failure. (section 4.12.2)
 147. The **final design** shall include provisions to remove LNG from the inlet channel of the vaporizer. (section 4.12.2)
 148. The **final design** shall include a shutoff valve at the suction and discharge of each LNG vaporizer. (section 4.12.2)
 149. The **final design** shall specify that the vent stack be equipped with a discharge piece designed for ignited discharge conditions. (section 4.12.2)
 150. The **final design** shall include P&IDs and drawings of the meter station. (section 4.12.2)
 151. The **final design** shall include a discretionary vent valve for each LNG tank, operable through the DCS. (section 4.12.2)
 152. The **final design** shall include boiloff gas flow and temperature measurement for each tank. (section 4.12.2)
 153. The **final design** shall include LNG tank fill flow measurement with high flow alarm. (section 4.12.2)
 154. The **final design** shall specify that all ESD valves are to be equipped with open and closed position switches connected to the DCS/SIS. (section 4.12.2)
 155. The **final design** shall specify that the hazardous area classification of the LNG pump area and vaporizer LNG inlet and outlet piping areas will be Class 1 Group D, Division 1. (section 4.12.2)
 156. The **final design** shall include provisions to protect piperacks and cabling from the effects of fire in the spill impoundment, S-606. (section 4.12.2)
 157. The **final design** of the firewater system shall include two firewater jockey pumps. (section 4.12.2)
 158. The **final design** shall specify that cameras will be provided to provide complete coverage of the unloading, LNG storage and process areas, in addition to the cameras required for intrusion detection and security monitoring. (section 4.12.2)
 159. The **final design** shall specify that all drains from high pressure LNG systems are to be equipped with double isolation and bleed valves. (section 4.12.2)
 160. The **final design** shall specify that for LNG and natural gas service, branch piping and piping nipples less than 50 mm (2 inches), are to be no less than schedule 160. (section 4.12.2)
 161. The **final design** shall specify that piping and equipment that may be cooled with liquid nitrogen is to be designed for liquid nitrogen temperatures, with regard to allowable movement and stresses. (section 4.12.2)
 162. The **final design** shall include details of the shut down logic, including cause and effect matrices for alarms and shutdowns. (section 4.12.2)
 163. The **final design** shall include emergency shutdown of equipment and systems activated by hazard detection devices for flammable gas, fire, and cryogenic spills, when applicable. (section 4.12.2)

-
164. The **final design** shall include details of the air gaps to be installed downstream of all seals or isolations installed at the interface between a flammable fluid system and an electrical conduit or wiring system. Each air gap shall vent to a safe location and be equipped with a leak detection device that: shall continuously monitor for the presence of a flammable fluid; shall alarm the hazardous condition; and shall shutdown the appropriate systems. (section 4.12.2)
 165. The **final design** shall include a hazard and operability review of the completed design. A copy of the review and a list of the recommendations shall be filed with the Secretary. (section 4.12.2)
 166. The **final design** shall include provisions for the installation of temporary high-pressure boiloff compression in the event that sendout operation is curtailed or interrupted for extended periods. Details shall include plans and drawings of the boiloff gas recovery system and specification of the equipment and compressor to be installed. (section 4.12.2)
 167. The **final design** shall include the modifications to the unloading pier design and operating procedures specified in AES's response number 90 in its June 16, 2008 filing.
 168. All valves including drain, vent, main, and car sealed, or locked valves shall be tagged in the field during construction and **prior to commissioning**. (section 4.12.2)
 169. The design details and procedures to record and to prevent the tank fill rate from exceeding the maximum fill rate specified by the tank designer shall be filed **prior to commissioning**. (section 4.12.2)
 170. A tabulated list of the proposed hand-held fire extinguishers shall be filed **prior to commissioning**. The list shall include the equipment number, type, size, number, and location. Plan drawings shall include the type, size, and number of all hand-held fire extinguishers. (section 4.12.2)
 171. Operation and Maintenance procedures and manuals, as well as safety procedure manuals, shall be filed **prior to commissioning**. (section 4.12.2)
 172. The FERC staff shall be notified of any proposed revisions to the security plan and physical security of the facility **prior to commencement of service**. (section 4.12.2)
 173. Progress on construction of the Project shall be reported in filed **monthly** reports. Details shall include a summary of activities, projected schedule for completion, problems encountered and remedial actions taken. Problems of significant magnitude shall be reported to the FERC **within 24 hours**. (section 4.12.2)

In addition, we recommend that the following measures (174 through 178) shall apply throughout the life of the facility:

174. The facility shall be subject to regular FERC staff technical reviews and site inspections on at least an **annual basis** or more frequently as circumstances indicate. Prior to each FERC staff technical review and site inspection, AES shall respond to a specific data request including information relating to possible design and operating conditions that may have been imposed by other agencies or organizations. Up-to-date detailed piping and instrumentation diagrams reflecting facility modifications and provision of other pertinent information not included in the semi-annual reports described below, including facility events that have taken place since the previously submitted semi-annual report, shall be submitted. (section 4.12.2)
175. **Semi-annual** operational reports shall be filed with the Secretary to identify changes in facility design and operating conditions, abnormal operating experiences, activities (including ship arrivals, quantity and composition of imported LNG, vaporization quantities, boil-off/flash gas, etc.), plant modifications including future plans and progress thereof. Abnormalities shall include, but not be limited to: unloading/shipping problems, potential hazardous conditions from offsite

vessels, storage tank stratification or rollover, geysering, storage tank pressure excursions, cold spots on the storage tanks, storage tank vibrations and/or vibrations in associated cryogenic piping, storage tank settlement, significant equipment or instrumentation malfunctions or failures, non-scheduled maintenance or repair (and reasons therefore), relative movement of storage tank inner vessels, vapor or liquid releases, fires involving natural gas and/or from other sources, negative pressure (vacuum) within a storage tank and higher than predicted boiloff rates. Adverse weather conditions and the effect on the facility also shall be reported. Reports shall be submitted **within 45 days** after each period ending **June 30 and December 31**. In addition to the above items, a section entitled "Significant plant modifications proposed for the next 12 months (dates)" also shall be included in the semi-annual operational reports. Such information would provide the FERC staff with early notice of anticipated future construction/maintenance projects at the LNG facility. (section 4.12.2)

176. In the event the temperature of any region of any secondary containment becomes less than the minimum specified operating temperature for the material, the Commission shall be notified **within 24 hours** and procedures for corrective action shall be specified. (section 4.12.2)
177. Significant non-scheduled events, including safety-related incidents (i.e., LNG or natural gas releases, fires, explosions, mechanical failures, unusual over pressurization, and major injuries) and security related incidents (i.e., attempts to enter site, suspicious activities) shall be reported to FERC staff. In the event an abnormality is of significant magnitude to threaten public or employee safety, cause significant property damage, or interrupt service, notification shall be made **immediately**, without unduly interfering with any necessary or appropriate emergency repair, alarm, or other emergency procedure. In all instances, notification shall be made to Commission staff **within 24 hours**. This notification practice shall be incorporated into the LNG facility's emergency plan. Examples of reportable LNG-related incidents include:
- a. fire;
 - b. explosion;
 - c. estimated property damage of \$50,000 or more;
 - d. death or personal injury necessitating in-patient hospitalization;
 - e. free flow of LNG that results in pooling;
 - f. unintended movement or abnormal loading by environmental causes, such as an earthquake, landslide, or flood, that impairs the serviceability, structural integrity, or reliability of an LNG facility that contains, controls, or processes gas or LNG;
 - g. any crack or other material defect that impairs the structural integrity or reliability of an LNG facility that contains, controls, or processes gas or LNG;
 - h. any malfunction or operating error that causes the pressure of a pipeline or LNG facility that contains or processes gas or LNG to rise above its maximum allowable operating pressure (or working pressure for LNG facilities) plus the build-up allowed for operation of pressure limiting or control devices;
 - i. a leak in an LNG facility that contains or processes gas or LNG that constitutes an emergency;
 - j. inner tank leakage, ineffective insulation, or frost heave that impairs the structural integrity of an LNG storage tank;
 - k. any condition that could lead to a hazard and cause a 20 percent reduction in operating pressure or shutdown of operation of a pipeline or an LNG facility;

-
- l. safety-related incidents to LNG marine traffic at or en route to and from the LNG facility;
or
 - m. an event that is significant in the judgment of the operator and/or management even though it did not meet the above criteria or the guidelines set forth in an LNG facility's incident management plan.

In the event of an incident, the Director of OEP has delegated authority to take whatever steps are necessary to ensure operational reliability and to protect human life, health, property or the environment, including authority to direct the LNG facility to cease operations. Following the initial company notification, Commission staff would determine the need for an on-site inspection by Commission staff, and the timing of an initial incident report (normally within 10 days) and follow-up reports. (section 4.12.2)

- 178. **Throughout the life of the facility**, AES shall ensure that the facility and any LNG vessel transiting to and from the facility comply with all requirements set forth by the Coast Guard Captain of the Port Sector Baltimore/Hampton Roads, including all risk mitigation measures recommended in the WSR. (section 4.12.5.5)
- 179. AES shall work with the Coast Guard and the Patuxent River Naval Air Station to develop the TMP in order to establish procedures to coordinate arrival and departure of LNG tankers to avoid interfering with Naval operations. (section 4.12.5.5)