APPENDIX D

DREDGING MANAGEMENT PLAN

INTRODUCTION

Development of the LNG Terminal will require expansion and deepening of certain existing marine channels that lead to the former Sparrows Point Shipyard where the LNG Terminal is proposed to be constructed. Currently, marine access to the Terminal Site from the mouth of the Chesapeake Bay is made via deep water shipping routes up the Chesapeake Bay, and from there, up the Brewerton Channel along the Patapsco River. These portions of the route are currently maintained at a -50-foot depth for ship traffic purposes. From the main Brewerton Channel of the Patapsco River to the proposed Terminal Site, a set of dredged marine channels exist leading to a floating drydock facility that is located on the north end of the proposed Terminal Site and to a graving yard and coal channel that is located on the south side of the Terminal Site. Each of these existing channels has a nominal depth of -30-feet along the channel alignment. The area between the floating dry dock and the graving yard has variable depth ranging from -15 feet to -30 feet. Figure 1C-1 shows bathymetry based on a recent survey update.

The anticipated area to be dredged in connection with the construction and operation of the LNG Terminal is shown on Figure 1C-1. The proposed dredging will widen the existing marine channel (leading from the Brewerton Channel), create a new 820-foot radius turning basin (part circular), and deepen the area near the LNG Terminal waterfront for berthing two LNG vessels. The anticipated volume of dredge material that would be generated by the planned dredging, based on the planned dredged depth of -45 feet, including over-dredge, is estimated to be between 3.0 and 4.5 million CY of dredge material depending on final dredged area configuration (the area outlined on Figure 1C-1 represents the maximum potential area of dredge).

Note that much of the area depicted in Figure 1C-1 has been dredged in the past. Further, the current owner of the adjacent property, BWI Sparrows Point, LLC, holds a dredging permit issued by the USACE and a Water Quality Certification from the State of Maryland to perform dredging using hydraulic or mechanical techniques. Dredging is authorized under the USACE permit for maintenance and waterfront operations to a depth of -39 feet across a portion of the area proposed to be dredged in connection with the construction of the LNG Terminal. Depending on bathymetric configuration of this area at the time AES is permitted to commence Project construction, the actual volume to be dredged and the material handling requirements may be less than envisioned by this Dredging Plan. However, this Dredging Plan has been developed by AES to ensure that dredge operations are undertaken consistent with recent past approvals and remaining volumes, while also incorporating approved methods that may be needed if dredge volumes are greater and/or if the environmental quality of dredge materials in sections of the dredge area are found to be degraded relative to currently permitted dredge projects in the immediate vicinity of the Project Area. AES will follow procedures for dredge performance consistent with recent past dredge approvals for this location and updated based on data collected for the Project.

This Dredging Plan describes (i) development of a dredged material recycling facility ("DMRF") to manage, process, and stockpile dredge material in a safe and environmentally conscious manner; (ii) dredge operations to allow for the environmentally safe conduct of dredging in the areas described above, and (iii) routine operation of these elements. The first step to be completed involves construction of the land facilities to manage dredge material. Once the handling facilities are completed and operational, dredging would be initiated beginning at the inner berth area, through the turning basin, and outward toward the Brewerton Channel.

DREDGED MATERIAL RECYCLING FACILITY

As part of the project construction phase, AES will construct the DMRF adjacent to the waterway at the Terminal Site. The 10,000 cubic yard per day DMRF" will occupy approximately five acres of upland property as shown on Figure 1C-2 and 1C-3. The DMRF will consist of duplicate (parallel) processing systems, each consisting of the following major components: a steel receiving hopper, a low-incline conveyor belt, a vibratory screen scalping unit that will actively screen the dredged material feed to a 4-inch minus cut, an oversized material/debris deflection chute, a concrete pad storage area, a pugmill processing system, steel pneumatic bulk storage silos, a steel receiving hopper, a radial stacking conveyor, and a concrete pad storage area for the processed dredged material contained by interlocked retaining wall units. The pugmill units will be completely enclosed therefore there will not be emissions associated with the operation of the pugmill units.

The DMRF will accept the dredged material directly from the work scows described below. No storage of the dredged material will be necessary. After is passes through the DMRF, the dredged material becomes a useful product ("processed dredged material" or "PDM"). Once the PDM exits the pugmill processing system the useful material will be stored in the adjacent PDM storage area. The temporary PDM storage area will consist of an additional 10±acre area (comprising a total aggregate area of approximately 15-acres) covered by bituminous paving or lined with a 10-mil high density polyethylene ("HDPE") liner covered by 6- to 12-inches of existing site soil or imported soil. After the PDM is tested and determined to be structurally suitable, AES will use some of the PDM for establishment of new site grades at the proposed LNG Terminal. The balance of the PDM will be marketed for off-site commercial use by third parties. A scale house and truck scale will be located adjacent to the temporary PDM storage area for weighing of the outbound shipments of the PDM product upon sale. Existing site roadways will be used for outbound shipments of the PDM product. Shipping will be by conventional dump truck or trailer vehicles observing vehicle weight limits established for federal, state and local roadways or possibly rail cars; transportation routes capable of handling weights of the vehicles will be used for shipment of the material to purchasers/end users.

PERMIT REQUIREMENTS

Several federal, state and local permits will be required for dredging operations and construction and operation of the DMRF. The list of permits expected to be applicable to the proposed dredging operations and the DMRF, including timelines for the application process, follows:

<u>Dredging Operations Permits:</u>

- United States Army Corps of Engineers – Dredging Permit (270 days)
- Joint Federal/State Permit for Alteration of a Tidal Wetland in Maryland (180 days)

<u>Dredged Material Processing Facility Permits:</u>

Maryland Department of Environment:

- General Permit for Storm water Discharge Associated with Construction Activities (30 days)
- State Water Quality Certificate (180 days)

- Joint Federal/State Permit for Alteration of any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland (180 days)
- Air Quality Permit to Construct (180 days)

Local:

- Erosion & Sedimentation Control Plan – Baltimore County Soil Conservation District (90 days)
- Occupancy Permit (90 days)

DMRF CONSTRUCTION PROCEDURES

Location and layout of the proposed DMRF are shown on Figures 1C-2 and 1C-3. The recycling facility area and temporary PDM stockpile area will be graded as necessary with existing site soils and covered with stone subbase materials in areas to be paved. Concrete foundations and storage pads will be formed and poured. The temporary PDM stockpile facility will be lined with a 10-mil HDPE liner in non-paved areas intended for storage of processed dredged material as necessary. On-site roadways will be improved as necessary for drainage and with additional bituminous concrete. Any remaining unpaved surface within the processing facility area will be paved with bituminous concrete, with stormwater management controls tied to existing facilities. A trailer office facility and scalehouse will be constructed and installed at the temporary PDM stockpile area for management of loading and off-site transport operations for the PDM product.

After civil work is completed, the DMRF will be erected. All components of the processing systems will be fabricated off-site and delivered via truck to the construction site. Components will be erected and assembled on-site.

OPERATIONS AND MAINTENANCE

Operation of the DMRF will occur during the construction phase of the LNG Terminal. Processing operations for dredged material will commence following construction of the DMRF and simultaneously with the commencement of dredging operations. The operations will be performed by trained personnel and in accordance with the conditions of all applicable permits and approvals.

Pre-Dredge Activities – Prior to mobilization to the field for dredge conduct this Dredging Plan will be updated and/or supplemented with current information regarding precise dredge layout, equipment specifications, procedures, operator qualifications, and any other information required by jurisdictional permitting agencies. An updated bathymetric survey will be performed prior to commencement of dredging operations and located according to a site datum. Updated and/or supplemented dredge operations and precautions are assumed to be as stringent as those approved for the maintenance dredging approved for the current shipyard operations. The Dredging Plan elements will include the criteria and procedures set forth below (as modified based on updated data):

1. Qualifications and experience of dredging personnel.
2. Specifications for navigational equipment and monitoring instrumentation.
3. Specifications for proposed dredging equipment, including, as may be applicable, dredge type, depth capability and accuracy, dredge platform dimensions and working draft, and proposed dredge material handling.

4. A drawing showing the width, length, and location of the dredge lanes and target elevations in each lane.
5. Proposed cycle time (dredge rates).
6. Dredge barge movement procedure and frequency.
7. Proposed cut or bite height relative to sediment thickness.
8. If necessary, based on results of analyses of sediment and amount of material dredging performed under existing maintenance permits, turbidity curtains may be required. The number, relative location, and stabilization control design details of turbidity curtains deployed to control sediment that may be re-suspended during dredging will be planned.
9. Updated procedures for sediment transport, unloading, and handling.
10. Spill containment design and procedures.
11. General dredging approach, and means to deal with variable water depth and sediment thickness.
12. Use of specialized services such as divers (if needed).
13. Means to be employed to minimize potential re-suspension of sediment (consistent with type of dredging to be performed – mechanical or environmental bucket)
14. Means to remove aquatic vegetation (if needed)
15. Means to remove debris.
16. Means to control and accurately document position of dredge and prevent over-dredging.
17. Means to minimize the potential effect of wind and waves on dredging precision.

Dredging Performance - A directional GPS will be used to locate the existing and proposed channel limits and to identify shoaled areas. An electronic tide gauge will be used to determine proper depths of dredging. The dredge contractor will use electronic position fixing equipment to provide accurate real-time control of the dredge lateral and vertical position in the project's co-ordinate system or State Plane Coordinate System while dredge preparation and operations are underway. Maximum accuracy of positioning shall be ±2 feet for horizontal (x, y) and ±0. 5 feet (6 inches) for vertical (z). An on-line graphics display of position and a hard copy capability will be required. The contractor's electronic positioning system must be accessible to the Project Engineer or designated representative upon request. It must provide a continuous automatic update and logging of position. The positioning system used will also be compatible with the project's coordinate system and is subject to the Project Engineer's approval.

Sediment will be removed to the design depth of –45 feet below MLLW, including material removed from the allowable over-depth as needed to achieve the intended project grade. Dredging within the project limits is anticipated to begin in the berthing area, and progress in reaches towards the outer channel to allow for earlier commencement of pier/dock construction operations.

Dredging will be conducted utilizing a mechanical (clamshell) dredge. If conditions warrant, based on previous maintenance dredging conducted and results of chemical analyses of sediment, dredging may require use of an environmental bucket or suitable alternative as required by permit conditions . Dredge positioning will be controlled by use of a directional GPS real-time kinematic ("RTK") control system providing for control of the bucket digging position.

In general, the use of an environmental bucket (equipped with vents, gaskets, and covers) or equivalent would be used if necessary to minimize the re-suspension of sediments into the water column during dredging (and if contaminant residuals are present at unacceptable levels in the sediment, as determined by chemical analyses performed during dredge planning). After loading, each hopper scow will be towed by tugboat to the DMRF. Dredging production is expected to be

up to 10,000 cubic yards per day and last approximately 18 to 24-months depending on seasonal restrictions associated with permits for dredging. Specific factors to be controlled in the dredge process to ensure effective and environmentally compatible dredge operations are as follows:

Crane Capability and Operation – A primary factor affecting dredging success is the crane's vertical depth control capabilities because lift depths are limited only by the crane size and the amount of cable on the drum. Power-up and power-down capabilities may both be required to provide optimal depth control. Freefall of the bucket in the water column may create excess turbidity when the bucket reaches the bottom and will be avoided. A reduced and controlled lowering speed is recommended for all dredge operations.

For environmental dredge bucket operations, if required, operational procedures consist of lowering the bucket to a target depth at a controlled rate to avoid overfilling, closing the bucket (an alarm confirms overlap closure), raising the bucket to a water level just below the vents to allow water drainage, moving the partially submerged bucket to a defined location near the receiving container, lifting the bucket from the water and swinging it over the receiving container, and opening the bucket to discharge sediment into the work scow.

Overlap Allowances – Bucket overlap will vary with site conditions, but some must be performed to ensure complete coverage. Bucket overlap is a physical operation controlled by the crane operator using the positioning software and adjusting to account for the bottom slope. After removing the first bucket on each swing radius, subsequent buckets are overlapped to ensure proper coverage. With proper overlap, each bucket is filled, but not overfilled, when the target depth is achieved.

*Avoiding Excess Water and Debri*s – Excess water is to be avoided when performing precision dredging. A properly filled and full bucket (as per the procedures above) will generate minimum water. The target depth at the final stage necessary to meet final project depth (grade) could be several inches less than necessary to fill the bucket. The project contractor will be required to have the capability to handle excess water.

The dredge material will be transferred to a hopper barge to settle. The water that results from dredging operations will be contained on the hopper barges for batch discharge. The water will be treated utilizing filtration and then tested for conformance to permit requirements prior to discharge in accordance with project permits. In the event that the water quality is not acceptable prior to discharge and cannot be made acceptable through reasonable treatment then it will be removed for treatment and disposal at a permitted facility.

If the environmental bucket is required by permit conditions, it will be equipped with a closure alarm to indicate potential debris preventing proper closure; release of contents and repositioning of the bucket may be necessary. Alternatively, a partial, unclosed bucket may be needed to remove the debris only that is preventing progress. Diver support for determining removal methods for unusually shaped or heavy debris may be needed and will be available for use of the environmental bucket dredge technique.

Operator Qualifications – Operator qualifications and operational experience will be reviewed to determine capability of performing the following tasks:

1. Using GPS positioning and dredging software to accurately place the bucket at the desired position, overlapping the edge of the previous bucket as appropriate;

2. Slowly lowering the bucket to a target depth;
3. Closing the bucket (and for environmental bucket operations, monitoring contact switches that indicate bucket closure);
4. Following project procedures for handling obstructions if rocks or debris prevent the bucket from closing;
5. If environmental bucket procedures are required, lifting the bucket to a water level just below the vents to allow excess water overlying the sediment to drain;
6. Moving a partially submerged bucket to a common lift area and/or into a secondary submerged containment vessel (if environmental bucket procedures are required);
7. Discharging the sediment in a manner that avoids excessive splashing and spillage;
8. If environmental bucket procedures are required, placing the emptied bucket in a dip tank to remove most of the adhering sediment before returning for the next bucket.

Dredge Material Movement - Full-time tugboats will be used to tend the dredge and for the switching of equipment and shuttling of work scows to the DMRF. It is anticipated that ten to fourteen 1,500 to 3,500-cubic yard work scows will be assigned to the project for dredged material transport. All scows and containers will be of solid hull construction and will be completely sealed and watertight in order to avoid any release of dredge material.

Dredge Material Processing – Typical setup and configuration of the DMRF is shown on Figure 1C-2. Anticipated location alternatives for the DMRF relative to the dredge area and the LNG Terminal are also shown. A typical process flow of dredge operations and handling steps through treatment and use is shown in the process illustration below.

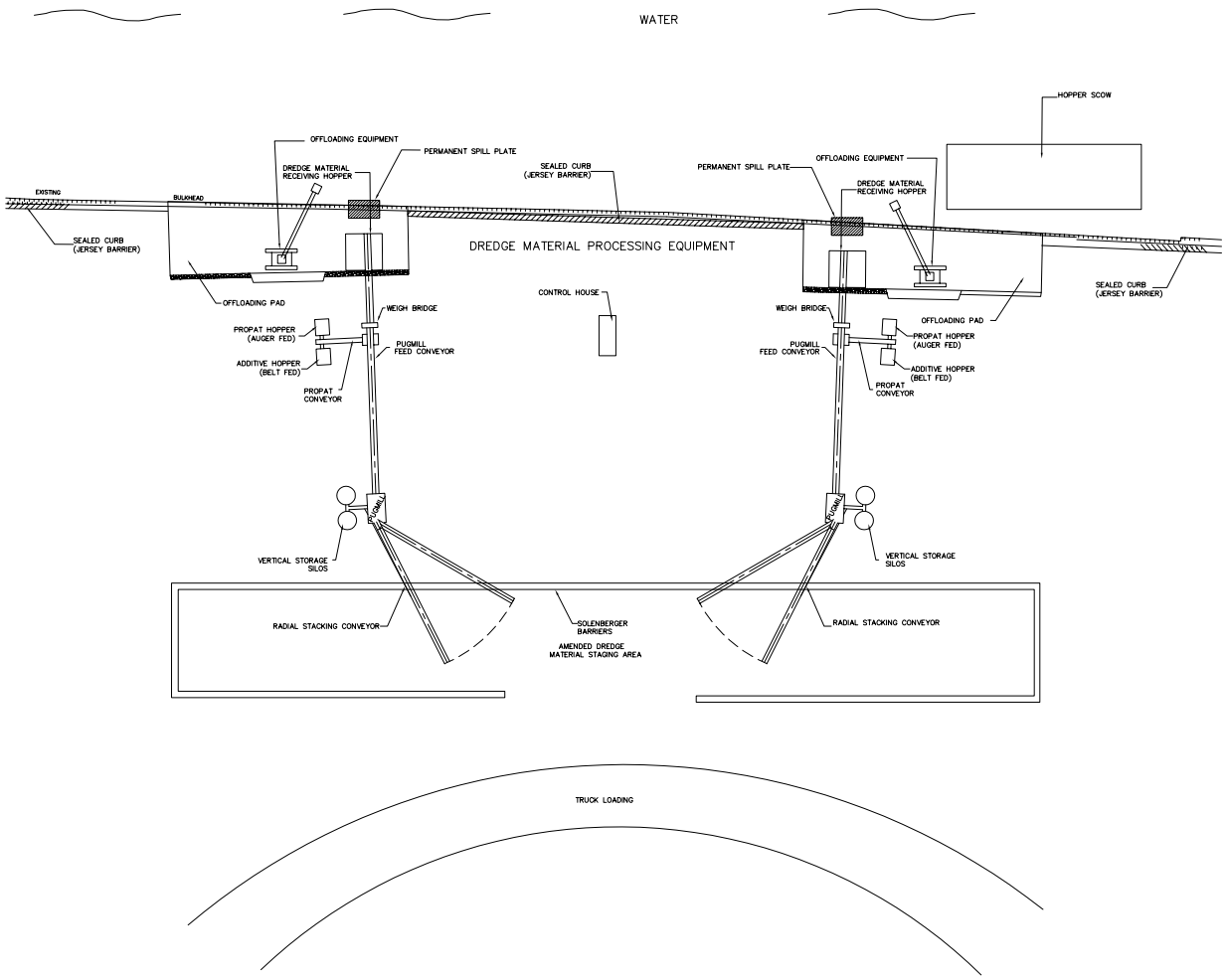
Illustration of Typical Dredge Material Recycling Facility Flow chart

The initial step in processing the dredged material is the reduction of the water content of the dredged sediments. The proposed dewatering process would involve dewatering of loaded barges at the dredging site or the DMRF. Loaded scows would be allowed to settle as part of the process so that the free-liquid portion would be visibly free of suspended sediments prior to pumping the decant water to the cargo area of a dedicated dewatering barge. The dedicated dewatering barge will be moored in a separate area located within the general area of the Terminal Site. After settling the decant for up to 24 hours, the decant water will be discharged within the area of dredging after testing for suspended solids or as required and/or authorized by permits. Alternately, after the initial barge settling period, portable pumps will be utilized to pump the water to land based tanks (e.g. frac tanks) for additional settling. Following this secondary settling, the water will be filtered and discharged under applicable permit conditions. As necessary, oversize debris will be removed from the barges using a conventional hydraulic excavator equipped with a rake or grapple. Separated debris will be recycled or disposed of at a permitted facility (see below).

After the raking portion of the process is completed, the raw dredged material will be stevedored from the work barges directly into the pugmill processing system utilizing hydraulic excavator(s) equipped with hydraulic closed clamshell bucket(s). The first step in the pugmill processing system involves use of a scalping unit that will actively screen the raw dredged material feed to a 4-inch minus cut. The unsuitable oversize material (debris) is separated and transfered to a concrete debris storage bunker. The screened raw dredged material feed falls directly into a receiving hopper that feeds a conveyor belt that delivers dredged material directly to a twin-shaft pugmill blending system. In the pugmill, the dredged material is mixed with reagent admixtures. Reagents or additives will be determined based on chemical analyses performed in dredge planning and/or as material is produced. Note that reagent/additive mixtures may be varied in order to render different consistencies or physical properties in the PDM (e.g. additives and water content may be varied for different strengths of sub-base or aggregate components). After mixing, the PDM empties from the pugmill onto a radial stacking conveyor. The “radial stacker” can be positioned to load directly into trucks, or to stockpile the material for re-handling to trucks, railcars, or back to hopper scows.

Following processing into one or more useful products, the PDM will transported via on-site conveyors to the designated temporary PDM stockpile/staging area. The PDM will be moved as required in this area using hydraulic excavators, bulldozers and vibratory compactors into large stockpiles for temporary storage in inventory until the material is sold for beneficial use.

From the temporary stockpile area, the PDM will be trans-loaded by wheel loaders or hydraulic excavators into over road trucks for off-site shipment to ultimate destination sites. Based on direct loading, the PDM can be transported off-site at an anticipated rate of approximately 5,000 cubic yards per day. Additional consideration will also be given to transporting the material off site using rail cars if available. Actual transport rate off site will be governed by locations receiving the material and their specific needs.



TYPICAL DREDGE RECYCLE OPERATION LAYOUT

NOTE:
THIS DRAWING IS INTENDED TO DEPICT THE TYPICAL ELEMENTS FOR TWO DREDGE MATERIAL RECYCLING OPERATIONS WORKING IN "PARALLEL." THE ACTUAL CONFIGURATION WILL VARY IN ACCORDANCE WITH AVAILABLE SPACE AND SITE CONSTRAINTS, AS SHOWN IN FIGURE 1C-3.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)

FIGURE 1C-2

DRAWN BY: JMW	CHECKED BY: TGP	DREDGE MATERIAL RECYCLING FACILITY PLAN – TYPICAL	PREPARED BY: ERG EARTHRES GROUP ENVIRONMENT ENGINEERING SCIENCE EarthRes Group, Inc. P.O.Box 468 7137 Old East Road Pipersville, PA 18947 USA www.earthres.com 215-766-1211	PREPARED FOR: CLEAN EARTH DREDGING TECHNOLOGIES, INC. 334 SOUTH WARMINSTER ROAD HATBORO, PENNSYLVANIA 19040	NO. / DATE / BY / REVISIONS
DATE: 04/26/06	PROJECT NO: 981004.003				
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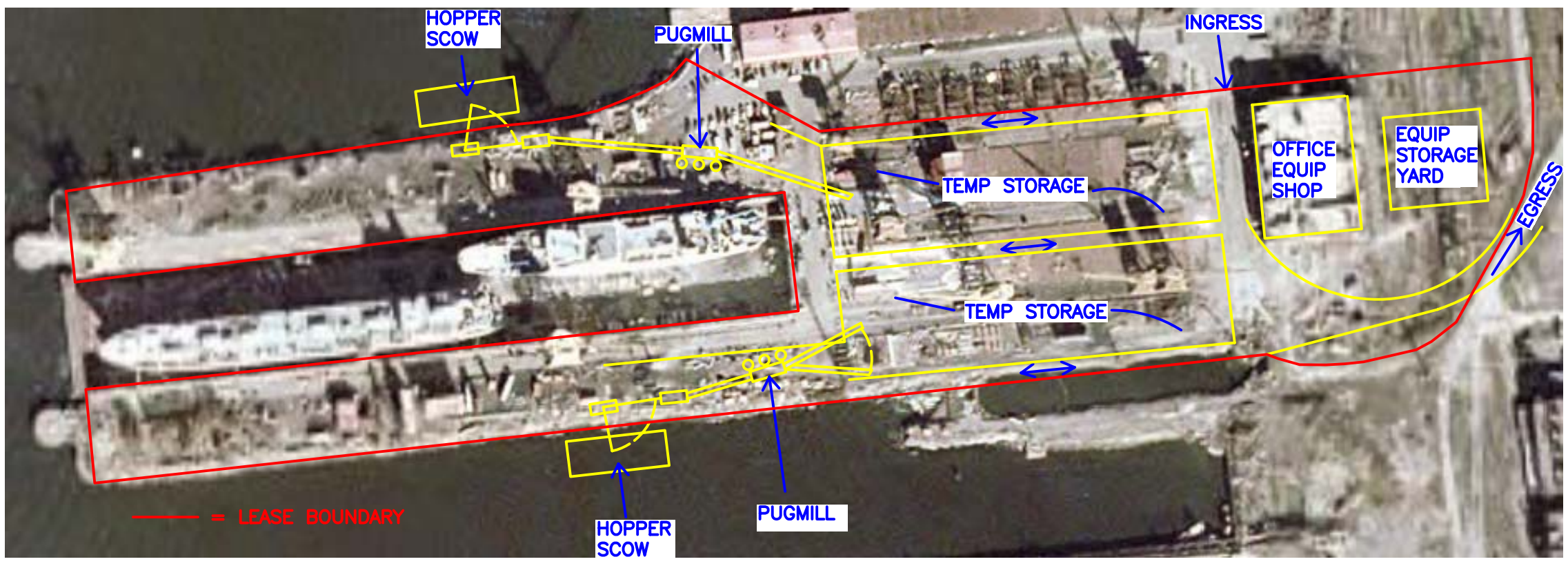

FIGURE 1C-3

General Notes

No.	Revision/Issue	Date

Firm Name and Address

CLEANEARTH Dredging Technologies

Hatboro, PA 19040
215-734-1400

Project Name and Address

DREDGE MATERIAL RECYCLING
FACILITY PLAN
BALTIMORE, MD

Project

Sheet

Date 8-7-06

Scale

Seal

DREDGING MANAGEMENT PLAN

Correspondence

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298

MAY - 3 2006

Matthew J. Stetter
Northern Ecological Associates, Inc.
Village Square, 33 Church Street
Fredonia, New York 14063

Dear Mr. Stetter,

This is in response to your letter dated April 7, 2006 requesting information on the presence of any species listed as threatened or endangered by NOAA's National Marine Fisheries Service (NMFS) that may be affected by the proposed construction of a Liquefied Natural Gas (LNG) facility at the Sparrows Point Industrial Complex at the mouth of the Patapsco River, Maryland.

AES Sparrows Point LNG, LLC proposes to construct, own and operate an LNG import, storage, and regasification facility. The project will include a 60-acre project site consisting of a parcel of land located between an existing graving dock and a floating dry dock. The project is anticipated to include a marine receiving terminal, three full containment 160,000-cubic meter LNG storage tanks, and facilities to support ship berthing and cargo offloading. The project also includes a closed-loop glycol vaporization system that will convert LNG back to its gaseous state prior to its delivery into an interstate pipeline system. Dredging within the Chesapeake Bay will be required, with the removal of 2.5 – 4 million cubic yards of material.

Several threatened and endangered species under the jurisdiction of NMFS can be found in the Chesapeake Bay and its tidal tributaries. Several species of sea turtles are known to be present in the Chesapeake Bay from April 1 – November 30 each year. Loggerhead (*Caretta caretta*), Kemp's ridley (*Lepidochelys kempi*), and green sea turtles (*Chelonia mydas*) are present in the Chesapeake Bay, mainly during late spring, summer and early fall when water temperatures are relatively warm. An estimated 3,000 - 10,000 loggerhead turtles and 500 Kemp's ridley sea turtles are found in the Chesapeake Bay annually. In the Chesapeake Bay, Kemp's ridleys frequently forage in shallow embayments, particularly in areas supporting submerged aquatic vegetation and on tidal flats. Approximately 95 percent of the loggerheads found in the Chesapeake Bay are juveniles; these turtles are found most commonly from the mouth of the Bay to the Potomac River while foraging along channel edges. The summer developmental habitat for green turtles encompasses estuarine and coastal waters of Chesapeake Bay. Leatherback sea turtles (*Dermochelys coriacea*) are predominantly pelagic but are also seasonally present in the Chesapeake Bay. Recent data from sightings and incidental captures in fishing gear indicate that loggerhead and Kemp's ridley are the species of sea turtles most likely to be found in the waters of Chesapeake Bay while leatherback and green sea turtles are less common in the area. Sea turtles are less common in the upper Bay; however, data from the Maryland Department of

Natural Resources sea turtle tagging program and data from the Sea Turtle Stranding and Salvage Network indicates that sea turtles do occur near the mouth of the Patapsco River.

The federally endangered shortnose sturgeon is known to be present in the Chesapeake Bay. Since 1996, the incidental capture of seventy-four shortnose sturgeon in the Chesapeake Bay and its tributaries had been reported via the US Fish and Wildlife Service Atlantic sturgeon reward program. This number includes four shortnose sturgeon captured incidentally in fishing gear at the mouth of the Patapsco River and several captured in the Bay just outside the mouth of the Patapsco River. Additionally, two mature egg-bearing females were captured in the Potomac River (one in September 2005 and one in March 2006). Researchers are currently tracking these individuals in an attempt to document successful spawning of shortnose sturgeon in the Chesapeake system in the spring of 2006.

Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) are distributed along the entire East Coast of the United States and have been designated a Species of Concern by NMFS. Many populations, including those found in the Chesapeake Bay, have undergone drastic declines in abundance since the late 1800s. Consequently, NMFS has initiated a status review for this species to determine if listing as threatened or endangered under the ESA is warranted. If it is determined that listing is warranted, a final rule listing the species could be published within a year from the date of publication of the listing determination or proposed rule.

The best available scientific information indicates that a reproducing Atlantic sturgeon population persists in the James River. Additionally, Atlantic sturgeon occupy the mainstem of the Chesapeake Bay and at least the York, Rappahannock, Nanticoke and Susquehanna Rivers. These populations are likely small and as such, may be particularly vulnerable to natural and/or anthropogenic disturbances. Atlantic sturgeon have been captured near the mouth of the Patapsco River. While Atlantic sturgeon receive no substantive or procedural protection under the ESA, NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on Atlantic sturgeon from proposed projects.

While endangered North Atlantic right (*Eubalaena glacialis*), humpback (*Megaptera novaeangliae*), and fin (*Balaenoptera physalus*) whales are rare visitors to the Chesapeake Bay, the area outside the Bay where the LNG vessels will be traveling is a high use area for these species. Endangered sperm whales (*Physeter macrocephalus*) may also be present further offshore, beyond the project location, but within the transit path of the vessels to and from the terminal. Large whales, particularly the North Atlantic right whale, are vulnerable to ship strikes, which often result in injury and mortality. The mid-Atlantic coast, including the area near the mouth of the Chesapeake Bay, is a seasonal migration corridor for female right whales and their calves. In recent years, the number of right whale deaths in the Chesapeake Bay area has been increasing, with at least 3 documented ship strike-related deaths since 2001.

NMFS recommends that the project proponents consider the following potential impacts to listed species while developing assessments of environmental impacts from the project:

- *Dredging*: Sturgeon and sea turtles are vulnerable to entrainment in hopper dredges, typically resulting in injury and death. Additionally, shortnose sturgeon have been killed by hydraulic pipeline and mechanical dredging operations. In order to assess the impacts

of dredging on listed species, NMFS will need to know the proposed volume, location, schedule, and type of dredge to be used. In general, NMFS will require that a NMFS-approved endangered species observer be present on the dredge to monitor for interactions with listed species.

- *In-water Construction*: Listed species are vulnerable to impacts from pile driving and other in-water construction activities, particularly if there are sound waves or sediment plumes produced. In order to assess the impacts of these activities on listed species, NMFS will need to know the number, type and size of piles to be driven as well as how they will be driven (i.e., impact hammer etc.) as well as the details of any other in-water construction work.
- *Ballast Water Intakes and Discharges*: Young life stages of sturgeon may be vulnerable to entrainment at intakes for ballast water or tank test water. NMFS typically recommends screens with 2mm mesh and intakes of 0.5 feet-per-second or less to protect all life stages of shortnose sturgeon. If ballast water will be discharged, the effects of the introduction of invasive species must be considered as well.
- *Vessel Traffic*: As noted above, listed whales are vulnerable to ship strikes. The project proponents should assess the impacts of increased vessel traffic on listed species and provide NMFS with the following information: the expected number of vessel transits (including the relative increase in vessel traffic in the area associated with the LNG terminal), transit speed, and approximate vessel routes. NMFS also recommends that the applicant propose mitigation measures to reduce the likelihood of ship strike, such as reducing vessel speed to 12 knots or less in areas where whales are known to occur and educating vessel operators about whale avoidance measures.

As you may know, Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended, states that each Federal agency shall, in consultation with the Secretary, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Any discretionary federal action that may affect a listed species must undergo Section 7 consultation. As effects to listed species are likely to result from the proposed action, NMFS recommends that the lead federal agency (i.e., FERC) initiate consultation pursuant to Section 7 of the ESA. FERC should submit a biological assessment, a determination of effects along with justification for the determination, and a request for concurrence to NMFS. If FERC determines that the project is "not likely to adversely affect" any listed species (i.e., when direct or indirect effects of the proposed project or its interdependent and/or interrelated actions on listed species are expected to be discountable, insignificant or completely beneficial) and NMFS concurs with this determination, NMFS will reply to FERC in a letter that will convey the concurrence, thus completing Section 7 consultation. If FERC determines that the project is "likely to adversely affect" any listed species (i.e., if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effects are not: discountable, insignificant, or beneficial) or NMFS does not concur with FERC's "not likely to adversely affect" determination, formal Section 7 consultation, resulting in the issuance of a Biological Opinion with an appropriate Incidental Take Statement, may be required. Any effects that amount to the take of a listed species (defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such

conduct") are not discountable, insignificant or entirely beneficial. Therefore, if any take is anticipated, formal consultation is required.

Initial review of the proposed project suggests that take of shortnose sturgeon and/or sea turtles may occur depending on the timing of dredging and the type of dredge plant to be used. Impacts to listed species from other aspects of the project may also be likely. Please note that if a formal section 7 consultation is necessary, NMFS has 135 days from the date of initiation of consultation (i.e., the date that NMFS has all information necessary to conduct consultation) to deliver a Biological Opinion and Incidental Take Statement to FERC. Any take of a listed species that occurs without special exemption (e.g., an Incidental Take Statement) is illegal pursuant to the prohibitions on take contained in Section 9 of the ESA.

My staff looks forward to working with you on the conservation of listed species in the Chesapeake Bay. Please contact Julie Crocker of my staff at (978)281-9300 x6530 to discuss these comments and the procedures for initiating consultation. For more information on whales and vessel interactions, please contact Kristen Koyama, NMFS Northeast Region Ship Strike Coordinator, at (978)281-9300 ext. 6531.

Sincerely,

Mary A. Colligan
Assistant Regional Administrator
for Protected Resources

Cc: Bolen, F/PR1
Nichols, F/NER4
Crocker, Koyama, F/NER3

File Code: Sec 7 FERC Chesapeake Bay Sparrows Point LNG
PCTS T/NER/2006/01700

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DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MD 21203-1715

ORIGINAL

REPLY TO
ATTENTION OF

JUN 1 3 2006

Operations Division

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SECRETARY
2006 JUN 21 P 3 32
FEDERAL ENERGY
REGULATORY COMMISSION

Ms. Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Dear Ms. Salas:

This is in response to the Federal Energy Regulatory Commission's (FERC) May 16, 2006 Notice of Intent (NOI) to Prepare an Environmental Impact Statement for the proposed Sparrows Point Project, Docket No. PF06-22-000, and the request for scoping comments and cooperating agency status in the preparation of a National Environmental Policy Act (NEPA) document for the proposed project.

The U.S. Army Corps of Engineers, Baltimore District (Corps) will be a cooperating agency in the preparation of the environmental impact statement (EIS) for the project. The draft EIS will serve as the Department of the Army Section 404/10 permit application for the project. In this regard, we look forward to working with your agency as the document is developed to ensure that the information presented in the NEPA document is adequate to fulfill the requirements of Corps regulations, the Clean Water Act Section 404(b)(1) Guidelines, and the Corps public interest review process.

In addition to the currently identified environmental issues outline in the NOI, the Corps requests that the following topics be comprehensively evaluated in the EIS:

1. Purpose and need for the project. In order to satisfy the Department of the Army regulations, the Corps will need to concur on the purpose and need statement for the project. We would be pleased to work with you and the applicant to develop a purpose and need statement that will satisfy the Department of the Army regulations for review of project under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. As part of the purpose and need for the project, provide additional justification in the EIS regarding the need for the Sparrows Point proposal in light of the Cove Point expansion project.

2. Alternatives analysis/Clean Water Act Section 404(b)(1) Guidelines. Based on the to be agreed upon project purpose, and in accordance with established Corps policy on the review of LNG projects, the Corps will need to concur on the range of alternatives retained for detailed study in the EIS. The alternatives analysis should comprehensively evaluate the following:

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a. Alternative LNG terminal locations
b. Alternative pipeline alignments
c. Alternative dredge plan configurations, depths, turning basin plans, etc.
d. Alternative dredge material disposal sites, recycle options, and treatment/reuse alternatives
e. A complete description of the criteria used to identify, evaluate, and screen project alternatives
f. Alternative dredge methods (e.g., mechanical, hydraulic)

3. Methods to avoid and minimize impacts to waters of the U.S.

   a. Alternative terminal and pipeline locations
   b. Alternative terminal site plan configurations
   c. Alternative pipeline alignments and alignment shifts
   d. Horizontal directional drilling (HDD) or other trenchless construction methods for utility line installation. Use of timber mats in wetland areas for utility line construction/equipment access and use of temporary bridges to span streams, etc.
   e. Methods to minimize dredging turbidity
   f. Methods to minimize adverse effects to water quality
   g. Reduction in project scope
   h. Reuse/upgrade of existing infrastructure at the proposed terminal location

4. Corps public interest review factors. The decision to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest. Among the factors that must be evaluated as part of the Corps public interest review include: conservation, economics, aesthetics, general environmental concerns, wetlands and streams, historic and cultural resources, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, energy needs, safety, food and fiber production, mineral needs, water quality, considerations of property ownership, air and noise impacts, and, in general, the needs and welfare of the people. Each of the Corps public interest factors must be evaluated comprehensively in the EIS.

5. Delineation of all waters of the U.S., including jurisdictional wetlands, in the project area.

6. Quantify impacts to waters of the U.S. (both temporary and permanent) to all waters of the U.S. (e.g., perennial, intermittent, ephemeral streams; rivers, lakes, ponds), including jurisdictional wetlands, for each project alternative. For streams and rivers, include both the linear feet of stream/river impacts (measured along the centerline of the stream/river) and square feet of impact. For temporary wetland impacts, quantify any change in wetland classification (e.g., palustrine forested to palustrine emergent, etc.)

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7. Cumulative and indirect impacts resulting from the project.

8. Environmental justice including compliance with the Executive Order 12898 on environmental justice.

9. Describe the disposal options for any excess fill material resulting from utility line installation.

10. Wetland and stream mitigation plans.

11. Analysis of the project's compliance with Section 7 of the Endangered Species Act, Section 106 of the National Historic Preservation Act, Section 401 of the Clean Water Act, and the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 04-267) [essential fish habitat (EFH) assessment].

12. Chemical and physical analysis of the dredge material.

13. Based on core samples of the chemical/physical composition of the sediment to be dredged, the method of dredging (e.g., mechanical, hydraulic), and the expected conditions in the waterway (e.g., tides, tidal surge, currents, circulation patterns, etc.), describe the maximum expected turbidity plume and any adverse environmental/water quality impacts, both upstream and downstream, and the expected time duration, resulting from the proposed dredging operation,. In addition, describe the plans and methods to contain and/or otherwise minimize the deleterious effects of the dredging operation to the aquatic environment.

14. Air quality impacts (i.e., Section 176(c) of the Clean Air Act General Conformity Rule Review).

15. Compliance with the Executive order on floodplains.

16. In consideration of the width of the waterway along the ship transit route and density of the local population in the project area, evaluate the safety and environmental issues associated with potential LNG releases and ship collisions.

17. Based on the shipping traffic frequency and speed, evaluate the expected turbidity issues associated with the LNG ships traveling to the berthing areas.

18. In order to adequately address endangered species issues, please ensure that the applicant provides an analysis of the LNG ship transit route for natural resource and endangered species impacts (e.g., whales, turtles, etc.).

19. Address potential conflicts with the LNG shipping traffic and recreational/commercial boating in the Chesapeake Bay, Patapsco River, Bear Creek, and at the proposed terminal location.

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20. Project review schedule and NEPA document preparation schedule. Other important milestones (e.g., public hearings, etc.) should be listed in the EIS.

We look forward to working with your agency as the EIS is developed and the review of the project proceeds. Should you have any questions concerning this letter, please contact Mr. Joseph P. DaVia of my staff at (410) 962-4527.

Sincerely,

FOR Vance G. Hobbs
Chief, Maryland Section Northern

Copy Furnished:

FERC: OEP – Gas Branch 2, PJ-11.2

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Robert L. Ehrlich, Jr., *Governor*
Michael S. Steele, *Lt. Governor*
C. Ronald Franks, *Secretary*

November 15, 2006

Kent Morton, Project Director
The AES Corporation
4300 Wilson Boulevard
Arlington, Virginia 22203

RE: AES Sparrows Point LNG Data Request #2
Docket No. PF06-22

Dear Mr. Morton:

As has been previously discussed, the Maryland Department of Natural Resources (DNR), acting through the Power Plant Research Program (PPRP) is conducting an independent risk assessment as part of its critical review of the AES Sparrows Point LNG Project. We appreciate the cooperation and courtesy AES has extended to PPRP throughout our review process including the timely submission of information provided in response to our first data request to AES (dated August 1, 2006). In order to objectively and accurately compare the results of PPRP's risk assessment with those of AES, we have some follow-up requests concerning the specific parameters, assumptions, and quantitative analyses used by AES in its assessment. The specific information being requested is indicated in the attachment to this letter.

We appreciate your continued support and cooperation in this matter and look forward to receiving the requested information. As always, please do not hesitate to contact me if you have any questions regarding this request.

Sincerely,

Richard I. McLean
Manager, Nuclear Programs

Enclosures: AES Sparrows Point LNG Project Data Request #2

AES Sparrows Point LNG Project –Data Request #2

2-1. Please provide aerial photographs of the site (ideally with about a 15-square mile range);

2-2. Please provide greater detail of the onsite layout (e.g. plot plans, isometric drawings, etc. showing the locations of structures and process items in the process, unloading, metering and send-out areas);

2-3. Please provide greater detail of the onsite provision for spill collection and channeling (the spill containment drawings only seem to provide information on the spill basin, further information on trenches or curbing of how releases are directed would be valuable);

2-4. Please provide confirmation of the high pressure methane gas route from the process area to metering (including elevation);

2-5. Please provide confirmation of the export gas pipeline route from the site (it appears from the drawings we have so far that it is a buried line from the metering back under the process area);

2-6. Please provide local population statistics (broken down by suburb if possible);

2-7. Please provide any shipping traffic statistics for the Port of Baltimore (freq, size of vessels, and routes);

2-8. Please provide flight statistics for Baltimore Washington International (BWI) (particularly take-offs and landings in each direction for each runway); and

2-9. Please provide traffic statistics for Francis Scott Key Bridge and William Preston Lane Junior Memorial Bridge (peak and off-peak if possible).