**TABLE OF CONTENTS**

**Crown Landing LNG and Logan Lateral Projects**
**Final Environmental Impact Statement**

Page


TABLE OF CONTENTS ..... i
LIST OF APPENDICES ..... v
LIST OF TABLES ..... vi
LIST OF FIGURES ..... viii
ACRONYMS AND ABBREVIATIONS ..... ix

EXECUTIVE SUMMARY ..... ES-1
PROJECT IMPACTS ..... ES-2
ALTERNATIVES CONSIDERED ..... ES-8
PUBLIC INVOLvEMENT AND AREAS OF CONCERN ..... ES-10
MAJOR CONCLUSIONS ..... ES-11

1.0 INTRODUCTION ..... 1-1
1.1 PURPOSE AND SCOPE OF THIS STATEMENT ..... 1-2
1.2 PROJECT PURPOSE AND NEED ..... 1-3
1.3 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS ..... 1-5
1.4 STAKEHOLDER INVOLVEMENT PROCESS ..... 1-8
1.5 PUBLIC REVIEW AND COMMENT ..... 1-14
1.6 NONJURISDICTIONAL FACILITIES ..... 1-17

2.0 DESCRIPTION OF PROPOSED ACTION ..... 2-1
2.1 EXISTING SITE Conditions ..... 2-1
2.2 PROPOSED PROJECT ..... 2-1
2.2.1 LNG Terminal ..... 2-4
2.2.1.1 Ship Unloading Facility ..... 2-4
2.2.1.2 LNG Storage Tanks ..... 2-6
2.2.1.3 Vaporization System ..... 2-6
2.2.1.4 Vapor Handling System ..... 2-8
2.2.1.5 Nitrogen Injection System ..... 2-8
2.2.2 LNG Ships ..... 2-8
2.2.3 Pipeline Facilities ..... 2-11
2.3 LAND REQUIREMENTS ..... 2-12
2.3.1 LNG Terminal ..... 2-12
2.3.2 Pipeline Facilities ..... 2-16
2.4 CONSTRUCTION PROCEDURES ..... 2-18
2.4.1 LNG Terminal ..... 2-19
2.4.1.1 LNG Storage and Process Facilities ..... 2-19
2.4.1.2 Ship Unloading Facility ..... 2-21
2.4.1.3 Dredging and Dredge Disposal ..... 2-21
2.4.2 Pipeline Facilities ..... 2-23
2.4.2.1 General Construction Techniques ..... 2-23
2.4.2.2 Special Construction Techniques ..... 2-28

TABLE OF CONTENTS (cont'd)


2.5 CONSTRUCTION SCHEDULE ..... 2-30
2.6 ENVIRONMENTAL COMPLIANCE, INSPECTION, AND MITIGATION MONITORING ..... 2-31
2.7 OPERATION AND MAINTENANCE PROCEDURES ..... 2-31
2.7.1 LNG Terminal ..... 2-31
2.7.2 Pipeline Facilities ..... 2-32
2.8 SAFETY CONTROLS ..... 2-32
2.8.1 LNG Terminal ..... 2-32
2.8.1.1 Spill Impoundment System ..... 2-32
2.8.1.2 Fire and Hazard Detection System ..... 2-34
2.8.1.3 Fire and Hazard Control System ..... 2-35
2.8.1.4 Emergency Shutdown System ..... 2-37
2.8.2 Pipeline Facilities ..... 2-37
2.8.2.1 Corrosion Protection and Detection Systems ..... 2-37
2.8.2.2 Emergency Response Procedures ..... 2-37
2.9 FUTURE PLANS AND ABANDONMENT ..... 2-37

3.0 ALTERNATIVES ..... 3-1
3.1 NO ACTION OR POSTPONED ACTION ..... 3-2
3.2 SYSTEM ALTERNATIVES ..... 3-5
3.2.1 Existing Onshore and Offshore LNG Facilities ..... 3-6
3.2.2 Recently Approved, Proposed, or Planned LNG Projects ..... 3-12
3.2.2.1 Onshore LNG Projects ..... 3-12
3.2.2.2 Offshore LNG Projects ..... 3-17
3.2.3 Pipeline System Alternatives ..... 3-21
3.3 LNG TERMINAL ALTERNATIVES ..... 3-23
3.3.1 Regional Review ..... 3-23
3.3.2 Port Review ..... 3-23
3.3.2.1 Offshore Ports ..... 3-23
3.3.2.2 Specific Offshore Port Review ..... 3-30
3.3.2.3 Coastal Ports ..... 3-33
3.3.3 Site Specific Review of Onshore Sites along the Delaware Bay and River ..... 3-36
3.4 PIER ALTERNATIVES ..... 3-59
3.5 PIPELINE ALTERNATIVES ..... 3-64
3.5.1 Pipeline System Alternatives ..... 3-64
3.5.2 Major Route Alternatives ..... 3-65
3.5.2.1 Railroad Alternative ..... 3-65
3.5.2.2 Hayes Street Alternative ..... 3-68
3.5.2.3 Sunoco Alternative ..... 3-68
3.5.2.4 Upland Road Alternative ..... 3-69
3.5.3 Minor Route Variations ..... 3-70

4.0 ENVIRONMENTAL ANALYSIS ..... 4-1
4.1 GEOLOGIC RESOURCES ..... 4-2
4.1.1 Physiographic and Geologic Setting ..... 4-2
4.1.2 Blasting ..... 4-4
4.1.3 Mineral Resources ..... 4-5
4.1.4 Geologic Hazards ..... 4-5
4.1.4.1 Seismic-related Hazards ..... 4-5

TABLE OF CONTENTS (cont'd)


4.1.4.2 Load-Bearing Capacity ..... 4-8
4.1.4.3 Slope Instability ..... 4-9
4.1.4.4 Subsidence ..... 4-9
4.1.4.5 Flooding ..... 4-9
4.1.5 Paleontological Resources ..... 4-10
4.2 SOILS AND SEDIMENTS ..... 4-11
4.2.1 Soil Resources ..... 4-11
4.2.2 Sediments ..... 4-19
4.3 WATER RESOURCES ..... 4-28
4.3.1 Groundwater ..... 4-28
4.3.2 Surface Water ..... 4-32
4.4 WETLANDS ..... 4-42
4.5 VEGETATION ..... 4-48
4.6 WILDLIFE AND AQUATIC RESOURCES ..... 4-52
4.6.1 Wildlife Resources ..... 4-52
4.6.2 Aquatic Resources ..... 4-56
4.6.3 Essential Fish Habitat ..... 4-71
4.7 THREATENED, ENDANGERED, AND OTHER SPECIAL STATUS SPECIES ..... 4-73
4.7.1 Federally Listed Threatened and Endangered Species ..... 4-75
4.7.2 State-listed Species ..... 4-83
4.8 LAND USE, RECREATION, AND VISUAL RESOURCES ..... 4-88
4.8.1 Land Use ..... 4-88
4.8.1.1 LNG Terminal ..... 4-88
4.8.1.2 Pipeline Facilities ..... 4-89
4.8.2 Existing Residences and Planned Developments ..... 4-93
4.8.2.1 LNG Terminal ..... 4-93
4.8.2.2 Pipeline Facilities ..... 4-94
4.8.3 Coastal Zone Management ..... 4-97
4.8.3.1 New Jersey ..... 4-98
4.8.3.2 Delaware ..... 4-99
4.8.3.3 Pennsylvania ..... 4-101
4.8.4 Hazardous Waste Sites ..... 4-101
4.8.5 Recreation and Public Interest Areas ..... 4-105
4.8.5.1 Designated Recreation and Public Interest Areas ..... 4-105
4.8.5.2 General Recreation ..... 4-106
4.8.6 Visual Resources ..... 4-109
4.8.6.1 LNG Terminal ..... 4-109
4.8.6.2 Pipeline Facilities ..... 4-113
4.9 SOCIOECONOMICS ..... 4-115
4.9.1 Population, Economy, and Employment ..... 4-115
4.9.2 Housing ..... 4-117
4.9.3 Public Services ..... 4-118
4.9.4 Transportation and Traffic ..... 4-119
4.9.4.1 Vehicle Traffic ..... 4-119
4.9.4.2 Ship Traffic ..... 4-121
4.9.5 Property Values ..... 4-122
4.9.6 Tax Revenues ..... 4-124
4.9.7 Environmental Justice ..... 4-124
4.10 CULTURAL RESOURCES ..... 4-130

TABLE OF CONTENTS (cont'd)


4.10.1 Results of the Cultural Resources Surveys ....4-130
4.10.2 Native American Consultation....4-134
4.10.3 Unanticipated Discoveries ....4-135
4.11 AIR QUALITY AND NOISE ....4-136
4.11.1 Air Quality ....4-136
4.11.2 Noise ....4-147
4.12 RELIABILITY AND SAFETY ....4-154
4.12.1 LNG Hazards ....4-155
4.12.2 Cryogenic Design and Technical Review....4-156
4.12.3 Storage and Retention Systems....4-162
4.12.4 Siting Requirements – Thermal and Dispersion Exclusion Zones ....4-167
4.12.5 Marine Safety....4-175
4.12.5.1 Delaware Bay and River and the Marcus Hook Area....4-182
4.12.5.2 Requirements for LNG Ship Operations....4-185
4.12.5.3 Environmental Impacts Associated with Coast Guard Actions ....4-191
4.12.5.4 LNG Ship Safety....4-196
4.12.6 Terrorism and Security Issues....4-203
4.12.7 Pipeline Facilities....4-205
4.12.7.1 Safety Standards ....4-205
4.12.7.2 Pipeline Accident Data ....4-208
4.12.7.3 Impact on Public Safety ....4-210
4.12.8 Additional Safety Issues Identified During Scoping ....4-212
4.12.9 Conclusions on Safety Issues....4-213
4.13 CUMULATIVE IMPACTS....4-215

5.0 CONCLUSIONS AND RECOMMENDATIONS ....5-1
5.1 SUMMARY OF THE STAFF'S ENVIRONMENTAL ANALYSIS ....5-1
5.2 FERC STAFF'S RECOMMENDED MITIGATION....5-17

## APPENDICES

VOLUME II – APPENDICES


| | |
|---|---|
| APPENDIX A | FINAL EIS DISTRIBUTION LIST FOR THE CROWN LANDING LNG PROJECT |
| APPENDIX B | TYPICAL RIGHT-OF-WAY CROSS SECTIONS |
| APPENDIX C | TEMPORARY EXTRA WORKSPACES AND ACCESS ROADS |
| APPENDIX D | TEXAS EASTERN'S SOIL EROSION AND SEDIMENTATION CONTROL PLAN |
| APPENDIX E | ESSENTIAL FISH HABITAT ASSESSMENT |
| APPENDIX F | RESIDENCES AND OTHER STRUCTURES WITHIN 50 FEET OF THE CONSTRUCTION WORK AREA FOR THE LOGAN LATERAL PROJECT |
| APPENDIX G | REFERENCES AND CONTACTS |
| APPENDIX H | LIST OF PREPARERS |
| APPENDIX I | FINAL SAMPLING AND ANALYSIS PLAN |
| APPENDIX J | COMMENTS AND RESPONSES ON DRAFT EIS |
| APPENDIX K | DRAFT GENERAL CONFORMITY DETERMINATION |
| APPENDIX L | U.S. COAST GUARD LETTER OF INTENT AND WATERWAY SUITABILITY REPORT LETTER |
| APPENDIX M | SUBJECT INDEX |

## TABLES


| Number | Title | Page |
|---|---|---|
| 1.3-1 | Major Permits, Approvals, and Consultations for the Crown Landing LNG Project | 1-9 |
| 1.3-2 | Major Permits, Approvals, and Consultations for the Logan Lateral Project | 1-12 |
| 1.4-1 | List of Interagency Meetings Conducted for the Proposed Projects | 1-14 |
| 1.5-1 | Primary Issues Identified and Comments Received During the Public Scoping Process for the Crown Landing LNG and Logan Lateral Projects | 1-16 |
| 2.3.2-1 | Summary of Land Requirements Associated with Construction and Operation of the Pipeline Facilities for the Logan Lateral Project | 2-16 |
| 2.3.2-2 | Location of Existing Rights-of-Way in Relation to the Proposed Pipeline Route | 2-17 |
| 2.8.1-1 | Federal Siting and Design Requirements for LNG Facilities | 2-34 |
| 2.8.1-2 | Proposed Locations of Smoke, Combustible Gas, and UV/IR Flame Detectors at the LNG Terminal | 2-35 |
| 2.8.1-3 | Proposed Locations of Fire Protection System Equipment at the LNG Terminal | 2-36 |
| 3.1-1 | Comparison of Air Emissions from Burning Fossil Fuels | 3-4 |
| 3.2.1-1 | Environmental Comparison of Crown Landing LNG and Logan Lateral Projects to the Cove Point Expansion Project | 3-7 |
| 3.2.2-1 | Recently Approved, Proposed, or Planned Onshore LNG Terminals | 3-13 |
| 3.2.2-2 | Recently Approved, Proposed, and Planned Offshore LNG Terminals | 3-18 |
| 3.3.2-1 | Estimated Air Emissions from LNG Vessel Operations During Offshore Cargo Unloading | 3-32 |
| 3.3.3-1 | Environmental Comparison of the LNG Terminal Site Alternatives to the Crown Landing LNG Terminal Site | 3-40 |
| 3.4-1 | Comparison of Alternative Pier Options With the Proposed Pier Design | 3-60 |
| 3.5.2-1 | Environmental Comparison of Alternative Routes to the Proposed Route | 3-67 |
| 4.2.1-1 | Acreage of Soils and Soil Characteristics at the Proposed LNG Terminal Site | 4-11 |
| 4.2.1-2 | Analytical Results of Soil Samples Collected within the Proposed LNG Terminal Site | 4-12 |
| 4.2.1-3 | Acreage of Soil Characteristics for the Proposed Pipeline Right-of-Way | 4-16 |
| 4.2.2-1 | Comparison of Average Metal Concentrations in the Sediment Samples and NOAA Sediment Screening Values | 4-23 |
| 4.3.1-1 | Water Supply Wells Located Within 150 Feet of the Logan Lateral Route | 4-29 |
| 4.3.2-1 | Waterbodies Crossed by the Logan Lateral Project | 4-34 |
| 4.3.2-2 | A Summary of Metal Concentrations in Sediments from the Proposed LNG Terminal Site and the Marcus Hook Channel and Berth | 4-36 |
| 4.4-1 | Wetlands and Wetland Transition Areas Located on the Proposed LNG Terminal Site Property | 4-43 |
| 4.4-2 | Wetlands Located Along the Logan Lateral Route | 4-46 |
| 4.5-1 | Acreage of Vegetative Communities Affected by Construction and Operation of the Proposed LNG Terminal | 4-49 |
| 4.5-2 | Acreage of Vegetative Communities Affected by Construction and Operation of the Logan Lateral Project | 4-50 |
| 4.6.2-1 | Representative Game and Commercial Fish Species Known to Occur in the Project Area | 4-57 |
| 4.6.2-2 | Estimate of Potential Impacts on Selected Fish Species in the Delaware River as the Result of Ballast Water Withdrawal by LNG Ships Unloading Cargo at the Proposed LNG Terminal | 4-67 |
| 4.6.2-3 | Estimate of Potential Impacts of Hydrostatic Test Water Withdrawal during Construction of the Proposed LNG Terminal on Selected Fish Species in the Delaware River | 4-70 |
| 4.7-1 | Special Status Species Potentially Occurring in the Project Area | 4-74 |

TABLES (cont'd)


| Number | Title | Page |
|---|---|---|
| 4.8.1-1 | Land Area Affected by the Proposed LNG Terminal | 4-88 |
| 4.8.1-2 | Land Uses Crossed by the Pipeline Route for the Logan Lateral Project | 4-89 |
| 4.8.1-3 | Acres of Land Affected by Construction and Operation of the Pipeline Facilities for the Logan Lateral Project | 4-91 |
| 4.8.2-1 | Planned Developments within 0.25 Mile of the Proposed Pipeline Route | 4-96 |
| 4.8.4-1 | Potential Hazardous and Solid Waste Sites within 0.25 Mile of the Proposed Pipeline Facilities | 4-103 |
| 4.8.5-1 | Summary of Public Waterfront Access Sites Evaluated for the Crown Landing LNG Project | 4-110 |
| 4.8.6-1 | Summary of Visual Analysis Conducted for the Crown Landing LNG Project | 4-114 |
| 4.9.1-1 | Existing Socioeconomic Conditions for the Crown Landing LNG and Logan Lateral Projects | 4-116 |
| 4.9.2-1 | 2000 Housing Characteristics for the Project Area | 4-117 |
| 4.9.2-2 | Temporary Accommodations Available in the Project Area | 4-118 |
| 4.9.7-1 | Racial/Ethnic Statistics for the Project Area | 4-125 |
| 4.9.7-2 | Economic Statistics for the Project Area | 4-126 |
| 4.11.1-1 | Ambient Air Quality Standards | 4-137 |
| 4.11.1-2 | Existing Ambient Air Concentrations for the Project Area | 4-138 |
| 4.11.1-3 | Emission Source Information for LNG Terminal Equipment | 4-139 |
| 4.11.1-4 | Operating Air Emissions Summary for the Proposed LNG Terminal | 4-141 |
| 4.11.1-5 | Estimated Air Emissions from the Crown Landing LNG Mobile Sources | 4-147 |
| 4.11.2-1 | Noise Sensitive Areas Near the Proposed LNG Terminal Site | 4-148 |
| 4.11.2-2 | Existing Noise Levels at the Closest Noise Sensitive Areas | 4-150 |
| 4.11.2-3 | Noise Specifications for Proposed LNG Terminal | 4-152 |
| 4.11.2-4 | Estimated Noise Impact from Proposed LNG Terminal | 4-152 |
| 4.12.4-1 | Impoundment Areas for LNG Spills | 4-170 |
| 4.12.4-2 | Thermal Exclusion Zones | 4-171 |
| 4.12.5-1 | Number of Commercial Vessels Transiting Delaware Bay and River | 4-183 |
| 4.12.5-2 | Minimum Striking Speed to Penetrate LNG Cargo Tanks | 4-198 |
| 4.12.5-3 | LNG Spills on Water | 4-201 |
| 4.12.7-1 | Natural Gas Service Incidents by Cause | 4-209 |
| 4.12.7-2 | Outside Forces Incidents by Cause (1970-1984) | 4-210 |
| 4.12.7-3 | External Corrosion by Level of Control (1970-1984) | 4-210 |
| 4.12.7-4 | Annual Average Fatalities - Natural Gas Transmission and Gathering Systems | 4-211 |
| 4.12.7-5 | Nationwide Accidental Deaths | 4-211 |
| 4.13-1 | Past, Present, and Future Projects That Could Cumulatively Impact Resources of Concern Near the Crown Landing LNG and Logan Lateral Projects | 4-216 |

## FIGURES


| Number | Title | Page |
|---|---|---|
| 2.1-1 | Aerial Photograph of Proposed LNG Terminal Site | 2-2 |
| 2.2-1 | General Project Locations | 2-3 |
| 2.2.1-1 | Proposed LNG Terminal Site Plan | 2-5 |
| 2.2.1-2 | Conceptual Design of LNG Storage Tanks | 2-7 |
| 2.2.3-1 | Proposed Logan Lateral Route (Sheet 1 of 3) | 2-13 |
| 2.2.3-1 | Proposed Logan Lateral Route (Sheet 2 of 3) | 2-14 |
| 2.2.3-1 | Proposed Logan Lateral Route (Sheet 3 of 3) | 2-15 |
| 2.4.1-1 | Proposed Dredging Area | 2-22 |
| 2.4.1-2 | Location of Proposed Dredge Disposal Site | 2-24 |
| 2.4.2-1 | Typical Pipeline Construction Sequence | 2-25 |
| 3.2.3-1 | Existing Pipeline Systems | 3-22 |
| 3.3.3-1 | Proposed and Alternative LNG Terminal Sites Along the Delaware River | 3-43 |
| 3.3.3-2 | Church Landing – LNG Terminal Site Alternative | 3-44 |
| 3.3.3-3 | Carneys Point – LNG Terminal Site Alternative | 3-46 |
| 3.3.3-4 | Ferro – LNG Terminal Site Alternative | 3-48 |
| 3.3.3-5 | Shuran – LNG Terminal Site Alternative | 3-49 |
| 3.3.3-6 | Repaupo – LNG Terminal Site Alternative | 3-51 |
| 3.3.3-7 | Paulsboro – LNG Terminal Site Alternative | 3-53 |
| 3.3.3-8 | Mantua Creek – LNG Terminal Site Alternative | 3-55 |
| 3.3.3-9 | Salem and Hope Creek - LNG Terminal Site Alternative | 3-57 |
| 3.4-1 | Pier Option A | 3-61 |
| 3.4-2 | Pier Option B | 3-62 |
| 3.4-3 | Pier Option C | 3-63 |
| 3.5.2-1 | Major Route Alternatives | 3-66 |
| 3.5.3-1 | Palmer Street Variation | 3-72 |
| 3.5.3-2 | Ward Street Variations | 3-73 |
| 4.1.1-1 | Geologic Cross Section of the LNG Terminal Site | 4-3 |
| 4.2.1-1 | Soil Sampling Locations | 4-13 |
| 4.2.2-1 | Sediment Core Locations | 4-21 |
| 4.4-1 | Wetlands Located on the LNG Terminal Site | 4-44 |
| 4.9.7-1 | Environmental Justice Communities | 4-127 |
| 4.11.2-1 | Noise Sensitive Areas | 4-149 |
| H.1 | Examples of Single Containment Tanks | 4-164 |
| H.3 | Examples of Double Containment Tanks | 4-165 |
| H.4 | Examples of Full Containment Tanks | 4-166 |
| 4.12.5-1 | Proposed Shipping Route as Described in Letter of Intent to the Coast Guard | 4-178 |
| 4.12.5-2 | Potential Sensitive Resources Along Ship Route | 4-193 |

## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AADT | average annual daily traffic |
| ABSG | ABSG Consulting Inc. |
| ACEEE | American Council for an Energy-Efficient Economy |
| ACHP | Advisory Council on Historic Preservation |
| AMSC | Delaware Bay Area Maritime Security Committee |
| APE | area of potential effects |
| AQCRs | Air Quality Control Regions |
| ASSRT | Atlantic Sturgeon Status Review Team |
| AST | aboveground storage tank |
| ATSDR | Agency for Toxic Substances and Disease Registry |
| BA | biological assessment |
| BACT | Best Available Control Technology |
| Bcfd | billion cubic feet per day |
| BG LNG | BG LNG Services, L.L.C. |
| BP | BP Energy Company |
| Btu | British thermal unit |
| $Btu/ft^2$-hr | British thermal units per square foot per hour |
| CAA | Clean Air Act |
| CAAA | Clean Air Act Amendments |
| CAFRA | Coastal Area Facility Review Act |
| CDC | certain dangerous cargoes |
| CEII | Critical Energy Infrastructure Information |
| CEQ | Council on Environmental Quality |
| CERCLIS | Comprehensive Environmental Response, Compensation, and Liability Information System |
| Certificate | Certificate of Public Convenience and Necessity |
| CFR | Code of Federal Regulations |
| ChevronTexaco | ChevronTexaco Corporation |
| Class I | Mandatory Federal Class I |
| cm | centimeters |
| CMP | Coastal Management Program |
| CO | carbon monoxide |
| $CO_2$ | carbon dioxide |
| Coast Guard | U.S. Coast Guard |
| COC | Certificate of Compliance |
| COE | U.S. Army Corps of Engineers |
| COI | Coast Guard Certificate of Inspection |
| Columbia Gas | Columbia Gas Transmission Company |
| Commission | Federal Energy Regulatory Commission |
| CPT | cone penetration tests |
| CRA | Charles River Associates |
| Crown Landing | Crown Landing, LLC |
| CWA | Clean Water Act of 1972 |
| CZMA | Coastal Zone Management Act of 1972 |
| CZMP | Coastal Zone Management Program |
| DAC | Delaware Administrative Code |
| dBA | decibels on the A-weighted scale |
| DCMP | Delaware Coastal Management Program |

| | |
|---|---|
| DDT | dichlorodiphenyltrichloroethane |
| DMT | dilatometer |
| DNREC | Delaware Department of Natural Resources and Environmental Control |
| DOD | U.S. Department of Defense |
| DOE | U.S. Department of Energy |
| Dominion | Dominion Cove Point LNG, LP |
| DOT | U.S. Department of Transportation |
| DP | dynamically positioned |
| DRBC | Delaware River Basin Commission |
| DRCS | Delaware River Creel Survey |
| DSCZA | Delaware State Coastal Zone Act of 1971 |
| EFH | Essential Fish Habitat |
| EI | Environmental Inspector |
| EIA | Energy Information Administration |
| EIS | Environmental Impact Statement |
| EN 1473 | European Standard for LNG facilities |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act of 1973 |
| ESS | emergency shutdown system |
| Excelerate | Excelerate Energy, L.L.C. |
| F | Fahrenheit |
| FERC | Federal Energy Regulatory Commission |
| FERC Plan | FERC's Upland Erosion Control, Revegetation and Maintenance Plan |
| FERC Procedures | FERC's Wetland and Waterbody Construction and Mitigation Procedures |
| FPC | Federal Power Commission |
| FSO | Facility Security Officer |
| FSRU | Floating, storage, and regasification unit |
| $ft^3$ | cubic feet |
| FWS | U.S. Fish and Wildlife Service |
| g | gravity |
| Gas Tanker Code | *International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk* |
| GBS | gravity-based structure |
| gpm | gallons per minute |
| GTB | geotechnical boring |
| HAP | hazardous air pollutant |
| HCAs | high consequence areas |
| HDD | horizontal direction drill |
| hp | horsepower |
| IMO | International Maritime Organization |
| kPa | kilopascals |
| kV | kilovolt |
| LAER | lowest achievable emission rate |
| $L_{day}$ | daytime sound level |
| $L_{dn}$ | day-night sound level |
| $L_{eq(24)}$ | 24-hour equivalent sound level |
| LFL | lower flammability limit |
| LNG | liquefied natural gas |
| $L_{night}$ | nighttime sound level |

| | |
|---|---|
| LOR | Letter of Recommendation |
| LPG | Liquefied Petroleum Gas |
| LUST | leaking underground storage tank |
| $m^3$ | cubic meters |
| $m^3$/hr | cubic meters per hour |
| MACT | Maximum Achievable Control Technology |
| MARAD | Maritime Administration |
| MARSEC | Maritime Security |
| Mc | Made-land/coarse |
| MCE | Maximum Considered Earthquake |
| MCS | Management Classification System |
| Memorandum | Memorandum of Understanding on Natural Gas Transportation Facilities |
| Mf | Made-land/fine |
| mg/kg | milligrams per kilogram |
| mg/L | milligrams per liter |
| MLLW | mean lower low water |
| mm | millimeters |
| MMBtu/hr | million British thermal units per hour |
| MMcfd | million cubic feet per day |
| MMI | Modified Mercalli Intensity |
| MNI | Moffatt & Nichol International |
| MOA | Memorandum of Agreement |
| Monitoring and Contingency Plan | Horizontal Directional Drill Monitoring and Contingency Plan |
| MP | milepost |
| mph | miles per hour |
| MSA | Magnuson-Stevens Fishery Conservation and Management Act |
| NAAQS | National Ambient Air Quality Standards |
| NAVD | North American Vertical Datum |
| NEPA | National Environmental Policy Act of 1969 |
| NESHAPs | National Emission Standards for Hazardous Air Pollutants |
| NFPA | National Fire Protection Association |
| NFPA 59A | NFPA Standards for the Production, Storage, and Handling of LNG |
| NGA | Natural Gas Act |
| NHPA | National Historic Preservation Act |
| NJAAQS | New Jersey Ambient Air Quality Standards |
| NJAC | New Jersey Administrative Code |
| NJAPCA | New Jersey Air Pollution Control Act |
| NJCMP | New Jersey Coastal Management Program |
| NJDEP | New Jersey Department of Environmental Protection |
| NJDFW | New Jersey Division of Fish and Wildlife |
| NJDOT | New Jersey Department of Transportation |
| NJSCC | New Jersey Soil Cleanup Criteria |
| NMFS | National Marine Fisheries Service |
| NNSR | Nonattainment New Source Review |
| NOA | Notice of Availability |
| NOAA | National Oceanic and Atmospheric Administration |
| $NO_2$ | nitrogen dioxide |

| | |
|---|---|
| NOI | *Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Crown Landing LNG Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meeting* |
| Northeast Gateway | Northeast Gateway Energy Bridge L.L.C. |
| $NO_x$ | low nitrogen oxides |
| NPC | National Petroleum Council |
| NPDES | National Pollutant Discharge Elimination System |
| NRCS | Natural Resources Conservation Service |
| NRHP | National Register of Historic Places |
| NSAs | noise sensitive areas |
| NSPS | New Source Performance Standards |
| NSR | New Source Review |
| NVIC | Navigation and Vessel Inspection Circular |
| NYISO | New York Independent System Operator |
| $O_3$ | ozone |
| OBE | Operating Basis Earthquake |
| OCPPC | Office of Coastal Planning and Program Coordination |
| OEP | Office of Energy Projects |
| OPS | Office of Pipeline Safety |
| OCRM | Office of Coast and Ocean Resource Management |
| OWM | Office of Water Management |
| PADCNR | Pennsylvania Department of Conservation and Natural Resources |
| PADEP | Pennsylvania Department of Environmental Protection |
| PADOT | Pennsylvania Department of Transportation |
| PAFBC | Pennsylvania Fish and Boat Commission |
| PAH | polycyclic aromatic hydrocarbon |
| Pb | lead |
| PCB | polychlorinated biphenyl |
| PCZMP | Pennsylvania Coastal Zone Management Plan |
| PEL | Probable Effects Level |
| PGA | peak ground acceleration |
| PGS | Pennsylvania Geological Survey |
| PGW | Philadelphia Gas Works |
| $PM_{10}$ | particulate matter less than 10 microns in diameter |
| $PM_{2.5}$ | particulate matter less than 2.5 microns in diameter |
| ppb | parts per billion |
| ppm | parts per million |
| ppmvd | parts per million by volume on a dry basis |
| ppt | parts per thousand |
| PSD | Prevention of Significant Deterioration |
| psig | pounds per square inch gauge |
| PTE | potential to emit |
| Quest | Quest Consultants, Inc. |
| RM | river mile |
| RNA | Regulated Navigation Area |
| RPT | rapid phase transition |
| RSPA | Research and Special Programs Administration |
| Sandia Report | *Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water* |

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| SAP | Sampling and Analysis Plan |
| SB | soil boring |
| Secretary | Secretary of the Commission |
| SESC | Soil Erosion and Sedimentation Control |
| Shell | Shell USA Oil & Gas |
| SHPO | State Historic Preservation Officer |
| SIP | state implementation plan |
| SNG | Southern Natural Gas Company |
| $SO_2$ | sulfur dioxide |
| SOLAS | International Convention for the Safety of Life at Sea |
| SOTA | state-of-the-art |
| Southern LNG | Southern LNG, Inc. |
| SPCC | Spill Prevention, Containment and Countermeasure Plan |
| SPT | standard penetration tests |
| SSE | Safe Shutdown Earthquake |
| Strategy | Strategy to Reduce Ship Strikes of Right Whales |
| SVOCs | semi volatile organics |
| Tcf | trillion cubic feet |
| TEL | Threshold Effects Level |
| Texas Eastern | Texas Eastern Transmission, LP |
| TNT | trinitrotoluene |
| TPH | total petroleum hydrocarbons |
| tpy | tons per year |
| Tractabel | Tractabel LNG North America, L.L.C. |
| Transco | Transcontinental Gas Pipe Line Corporation |
| Trunkline Gas | CMS Trunkline Gas Company, L.L.C. |
| Trunkline LNG | CMS Trunkline LNG Company, L.L.C. |
| TSP | total suspended particulate |
| TSS | total suspended solids |
| USC | United States Code |
| USDA | U.S. Department of Agriculture |
| USGS | U.S. Geological Survey |
| UV/IR | ultraviolet/infrared |
| VOCs | volatile organics |
| Weeks Marine | Weeks Marine, Inc. |
| WREN | Water Resources Education Network |
| WSA | Waterway Suitability Assessment |
| WSR | Waterway Suitability Report |
| µg/kg | microgram per kilogram |