



NATIONAL ENVIRONMENT & PLANNING AGENCY

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THE NATURAL RESOURCES CONSERVATION AUTHORITY ACT The Natural Resources Conservation (Permits and Licences) Regulations, 1996

Permit to Undertake Enterprise, Construction
or Development in a Prescribed Area
[Pursuant to Section 9 (2)]

Permit No. 2016-14017-EP00296

Application Date: 8 July 2016

Issue Date: 3 November 2016

The Permittee: South Jamaica Power Company Limited

Of: 6 Knutsford Boulevard, Kingston 5

Is hereby authorized to undertake:

Construction and operation of a power generation plant of 1MW or above using hydrocarbon fuels

At: Old Harbour Bay, St. Catherine

In accordance with the terms and conditions specified in the Schedule:

This permit is granted subject to the Terms and Conditions set forth in the
Schedule below

SCHEDULE

The Natural Resources Conservation Authority under its mandate to ensure the proper management, conservation and protection of the physical resources of this island has pursuant to Section 9 of the Natural Resources Conservation Authority Act and the Natural Resources Conservation (Permits and Licences) Regulations 1996 established a system of permits for certain prescribed activities as mandated by The Natural Resources (Prescribed Areas) (Prohibition of Categories of Enterprise, Construction and Development) Order, 1996. It is an implied condition of every permit that based on the information presented in the Project Information Form, the Application Form and where applicable, the Environmental Impact Assessment, and any addendum or adjustments made thereto, that the Authority is of the view that the activity subject to all the conditions stipulated in this permit is not likely to be injurious to public health or the environment. Where new regulations are made or existing regulations are amended by the Minister under the Natural Resources Conservation Authority Act 1991 or other statute this Permit shall be deemed, upon promulgation of such regulations or statute to automatically be amended to conform to such regulations or statute.

This Permit comprises of all ten (10) pages of this document, the Permit Application Form dated 5 July 2016 and received and date stamped 8 July 2016 by the Authority; document titled “Environmental Impact Assessment Proposed Old Harbour Plant Re-powering Project (190 MW), Old Harbour Bay, St. Catherine, Jamaica” dated October 2015 and any accompanying addenda.

Description of Permitted Activity

This Permit is for the construction of a 190MW power plant in a 3 x 3 x 1 combined cycle configuration. The major components of the plant are:

- 3 – 40MW dual fuel combustion turbine generators
- 3 – dual pressure, non-reheat heat recovery steam generators (HRSG) – one associated with each gas turbine)
- 1 – 75MW steam turbine generator

The plant is designed for both base load and cycling duty (two shift operation) and will operate with a 98% average annual equivalent availability factor (EAF) for the life time of the plant (25 years).

The plant will also include:

- Two (2) auxiliary heat exchangers as part of the cooling system to cool water from 49.8°C to 44°C
- Continuous emissions monitoring (CEM) ports that will provide measurements of air emission levels in the exhaust stack of each HRSG
- A metering system to measure net energy output from the plant, and to monitor and co-ordinate operation of the facility. The location of the metering system will be in a 138 kV substation control building, and transformers for the metering system will be located on the 138 kV side of each generator.
- Chemical feed systems to include packaged skids for ammonia, sodium hypochlorite, sodium bisulfite, and trisodium phosphate
- Fire protection system to include CO₂ fire suppression system, pre-action sprinkler systems, deluge sprinkler systems, wet pipe sprinkler systems, and surface mounted class III hose stations, smoke and heat detectors, manual pull stations, and horn/strobes

Fuel Supply

The combustion turbines are dual fuel with the primary fuel source being natural gas, which is to be supplied by a third party and Automotive Diesel Oil (ADO) as a contingency fuel.

Definitions

“Permittee” means the holder of this Permit

“Agency” means the National Environment and Planning Agency established pursuant to S.4 of the Executive Agencies Act

“Authority” means the Natural Resources Conservation Authority established pursuant to S.3 of the Natural Resources Conservation Authority Act.

“Representation” means any information implied or express on which the Authority has relied to grant this Permit and includes all the information contained in the Application Form, the Project Information Form and the Environmental Impact Assessment Report where applicable, addenda and all supplementary documentation and information including but not limited to correspondence.

The Permittee hereby undertakes to comply with all the following terms and conditions:-

General Conditions

1. All works carried out pursuant to this Permit shall be performed under the professional supervision of trained personnel who are qualified and competent to carry out the functions and duties of the Permitted Activity and who are conversant with the accompanying safety requirements and the hazards to workers, the public and the environment.
2. The Permittee shall not assign, or transfer or dispense with this Permit or part with any benefit under it except with the prior written consent of the Authority.
3. Any reference to time in this Permit shall be computed as of the date of issue of this Permit.
4. The Authority reserves the right to alter, amend or introduce new conditions to this Permit at any time.
5. The Authority may in its sole discretion revoke or suspend this permit if it is satisfied that a breach of any term or condition, implied or express, subject to which this permit has been granted has been committed.
6. The Permit is granted subject to any existing legal rights of third parties.
7. This Permit does not dispense with the Permittee's obligations under any other law, nor does it authorize a contravention of any statute, regulations, the common law or breach of any agreement.
8. The Authority reserves the right to review this Permit periodically and may initiate administrative and/or judicial action for any violation of any condition by the Permittee, its customers or guests, its agents, employees, servants, contractors or assignees.
9. The Permittee shall, prior to the commencement of the permitted activity, post a sign in a prominent place at the location of the permitted activity using the same design and words as in the template attached.
10. The company shall maintain and keep in good repair all equipment used in carrying on the process (or operation) as the case may be. Maintenance shall be carried out in accordance with the manufacturers' recommendations or in such better manner or at such greater frequency as operational experience may show to be appropriate.
11. There shall be safe and adequate access to all sampling and monitoring points.
12. The Permittee shall keep all records of the operation including any environmental monitoring results for a period of not less than five (5) years, computed from the date on which the records were made and such records shall be available for inspection at any reasonable time by any member or officer of the Authority authorized to do so.
13. Any amendment to the records shall be made in such a way as to leave the original result legible. Only authorized persons may make amendments to records and every such amendment shall bear the signature of the said authorized person.
14. The failure of the Authority to enforce at any time or for any period any one or more of the terms or the conditions of this Permit shall not be a waiver of its right at any time subsequently to enforce all the terms and conditions of this Permit.


15. Any member of the Authority or any authorized officer of the said Authority may at any reasonable time, make such periodical inspections and investigations in respect of the activities that are herein permitted for the purpose of ascertaining whether the terms and conditions of this permit are being observed or not and the Permittee shall allow such authorized officer to do such inspections.
16. If there is any proposed change in the ownership of the Permittee notification of such change shall be given to the Authority at least one (1) month prior to such change.
17. If the permitted activity does not commence within five years after the date of this Permit, then this Permit is void and the Permittee shall re-apply for a new Permit.

SPECIFIC CONDITIONS

DOCUMENTATION

1. The Permittee shall comply with all representations made in the Permit Application Form dated 5 July 2016 and received and date stamped 8 July 2016 by the Authority; document titled "Environmental Impact Assessment Proposed Old Harbour Plant Re-powering Project (190 MW), Old Harbour Bay, St. Catherine, Jamaica" dated October 2015 and any accompanying addenda.
2. The Permittee shall apply for and obtain an Environmental Permit pursuant to Section 9 of the Natural Resources Conservation Authority Act 1991, for Petroleum Storage and Stockpiling, for the Liquefied Natural Gas (LNG), prior to the commencement of construction and installation of any LNG storage facilities for the development.
3. The Permittee shall apply for and obtain approval from the Authority for an Environmental Permit and/or Licence pursuant to sections 9 and 12 of the Natural Resources Conservation Authority Act for any subsequent development on the property in accordance with the Natural Resources Conservation (Permits and Licences) Regulations 1996 and the Natural Resources (Prescribed Areas) (Prohibition of Categories of Enterprise, Construction and Development) Order 1996, prior to the commencement of these developments.
4. The Permittee shall submit for approval a mitigation plan for the power generation facility to ensure that all the National Ambient Air Quality Standards and the Significant Impact Level Concentrations of the Natural Resources Conservation Authority (Air Quality) Regulations 2006 are met. There shall be no commencement of construction prior to approval by the Authority of the mitigation plan.

START UP & CONTINGENCY FUEL

5. In the event that LNG is not available at the time of start-up, the Permittee shall hereby be permitted to use ADO with a Sulphur content of 0.25% for a period not exceeding one (1) year.
6. Save and Except instances of  EOM maintenance, the schedule of which must be provided by Permittee within 2 weeks of the effective date of this Permit, ALL incidents resulting in the plant being operated on ADO shall be brought to the attention of the Authority within 24hours.
7. Subject to specific condition 6, the Permittee shall be allowed to use ADO with a Sulphur content of 0.5% as contingency fuel for a period of thirty (30) days. If the Permittee intends to conduct operations outside of the stated period, an application shall be made to the National Environment and Planning Agency/Natural Resources Conservation Authority for approval to so proceed..

WATER SUPPLY AND TREATMENT

8. The Permittee shall apply for and obtain from the Water Resources Authority, Hope

Gardens, Kingston 7, a Licence to abstract water from any well prior to commencement of use of the wells. A copy of the Licence to abstract water shall be submitted to the Agency prior to the commencement of abstraction from the well. There shall be no change in the source of water for the operations of the Power Generation facility without the Prior written approval of the Authority.

9. The Permittee shall apply for and obtain an Environmental Permit for the construction and operation of water treatment facilities and an Environmental Licence to discharge trade effluent pursuant to Sections 9 and 12 of the Natural Resources Conservation Authority Act 1991, prior to the construction of the water treatment facility servicing the development and any discharge of trade effluent.

WASTEWATER TREATMENT

10. The Permittee shall apply for and obtain an Environmental Permit for the construction and operation of the Wastewater Treatment and Disposal Facility and an Environmental Licence to discharge treated effluent pursuant to Sections 9 and 12 of the Natural Resources Conservation Authority Act 1991, prior to the construction of any wastewater Treatment and Disposal Facility servicing the development and any discharge of trade effluent.
11. The Permittee shall apply for and obtain an Environmental Licence to discharge trade effluent pursuant to Sections 9 and 12 of the Natural Resources Conservation Authority Act 1991, prior to the commence of construction of the Power Plant.
12. The Permittee shall ensure that there is no commencement of operation of the newly constructed facility prior to connection to the wastewater treatment facilities servicing the development.
13. The Permittee shall apply for and obtain Environmental Licences pursuant to the Natural Resources Conservation (Wastewater and Sludge) Regulations, 2013 or an Environmental Permit pursuant to the Natural Resources Conservation Authority Act 1991 for the construction and operation of a sewage treatment facility prior to the commencement of construction of the Power Plant.

CONSTRUCTION

14. The Permittee shall report in writing on the status of construction works to the Manager of the Enforcement Branch National Environment and Planning Agency, 10 Caledonia Avenue, Kingston 5 or by email to EnforcementManager@nepa.gov.jm; and the Environmental Health Unit of the Ministry of Health, 2-4 King Street, Kingston, no later than the last Friday in every month during the period in which construction is taking place.
15. The Permittee shall submit a construction traffic management plan to the National Works Agency for approval prior to commencement of any construction.
16. The Permittee shall fence the site to prevent crocodiles from entering the facility, injury to any crocodiles or personnel of the power plant. The size and make of any mesh to be used in construction must be approved in writing by the Agency prior to the construction of the fence.

DRAINAGE

17. The Permittee shall design and implement a storm water drainage plan based on a design approved by the National Works Agency prior to the commencement of construction of the Power Plant.
18. The Permittee shall not negatively impede the natural drainage.

MAINTENANCE AND OPERATIONS

19. The Permittee shall develop a detailed Maintenance, Operations and Contingency Plan for the facility and submit to the Manager, Enforcement Branch, National Environment &

Planning Agency, 10 Caledonia Avenue, Kingston 5 or by email to EnforcementManager@nepa.gov.jm for approval, with copies to the Director, Environmental Health Unit of the Ministry of Health 2-4 King Street, Kingston within eight (8) weeks before the start of the project. The plan shall cover, but not be limited to, maintenance of the elements of the system including the mechanical and electrical equipment, provisions for malfunctions and emergencies.

20. The Permittee shall maintain a Complaints Register at the location. The Complaints Register should contain a log of all written and verbal complaints that specifically refer to concerns associated to the permitted facility. The log must include a record of the Permittee's actions to investigate the validity of each complaint and a record of actions taken to address each complaint.

SAFETY

21. The Permittee shall submit a Fire Certificate to the Authority and shall ensure that fire fighting equipment as required are installed, inspected and approved by the Fire Department prior to the commissioning of the facility.
22. The Permittee shall develop an Emergency Response Plan for the facility. The Plan shall include risk assessment for various components of the plant.
23. The Emergency Response Plan shall be approved by the Office of Disaster Preparedness and Emergency Management (ODPEM) and the Fire Department and submitted to the Authority, through Manager of the Enforcement Branch, National Environment & Planning Agency, 10 Caledonia Avenue, Kingston 5 or by email to EnforcementManager@nepa.gov.jm, within three (3) months before the start of the project.
24. The Permittee shall ensure that all staff is equipped with adequate personal protective equipment, including, but not limited to items, such as gloves, goggles, ear plugs and respirators.
25. The Permittee shall develop a detailed Environmental Management and Monitoring Plan for the facility in conjunction with representations made in the EIA and submit to the Manager, Enforcement Branch, National Environment & Planning Agency, 10 Caledonia Avenue, Kingston 5 or by email to EnforcementManager@nepa.gov.jm for approval, with copies to the Director, Environmental Health Unit of the Ministry of Health, 2-4 King Street, Kingston within eight (8) weeks before the start of the project. The Plan shall include but not be limited to the monitoring of generated Electromagnetic radiation associated with the Power Generation facility.
26. The Permittee shall ensure corrective measures are immediately undertaken in the event of any leaks or accidental release of any noxious, poisonous or polluting substances. All such instances are to be included in the general reporting requirements as per Specific Condition 46.

DUST /SEDIMENT CONTROL

27. The Permittee shall cover construction materials during transport to prevent the generation of fugitive dust.
28. The Permittee shall during the construction phase wet road surfaces and stockpiles of soil and marl to prevent the generation of fugitive dust.
29. The Permittee shall ensure that construction materials including soil and marl are adequately bermed and stored away from surface drainage channels and features.
30. The Permittee shall monitor areas of exposed soil during periods of heavy rainfall throughout the construction phase in order to reduce the impact of soil erosion and runoff

into waterways.

31. The Permittee shall during the operational phase wet unpaved road surfaces when they are in use and any exposed stockpiles of material to prevent the generation of fugitive dust.

FLORA AND FAUNA

32. There shall be no clearance or disturbance of any vegetation outside of the approved footprint of the power plant without the prior written approval of the Agency.
33. Trees with a trunk diameter equal to or greater than eighteen (18) centimetres measured at a height of one (1) metre above the ground shall be clearly marked (flagged using fluorescent tape at three levels on the trunk) and mapped for preservation prior to the clearance of the area slated for development. Any tree located on the road alignment or within the area to be occupied by the buildings may be removed. Any trees outside the area to be occupied by buildings or roadways require the prior written approval by the Authority.
34. The Manager of the Enforcement Branch, National Environment and Planning Agency, 10 Caledonia Avenue, Kingston 5 must be notified in writing of the completion of the tree flagging exercise at least seven (7) days prior to the clearance of the area slated for development.
35. The Permittee shall prior to the commencement of the development, including land clearance, inform their employees, agents, and subcontractors of the procedures regarding the protection of endemic or endangered fauna found on the site.
36. The Permittee shall submit a Landscape Plan to the Agency within ninety (90) days of the date of issue of this permit. No landscaping activities should be undertaken prior to the approval of this plan by the Agency. This plan must include but not be limited to:
 - a list of the species (both common and scientific names) to be used in landscaping
 - the source of the vegetation to be used during landscaping, especially large trees
 - a landscaping map.

NOISE ABATEMENT

37. The Permittee shall ensure that the noise level during construction does not exceed 85 dB at the boundary of the site.
38. The Permittee shall ensure that the noise level during operation does not exceed 75 dB at the boundary of the site.
39. The Permittee shall ensure that work during the construction phase of the development is carried out between the hours of 7:00am and 6:00pm from Mondays to Fridays and 8:00am and 6:00pm on Saturdays. There shall be no work during the construction phase of the development on Sundays and public holidays. Any work to be done outside of this period will require the permission of the Authority.

SOLID WASTE DISPOSAL

40. The Permittee shall ensure that there is no burning of waste or any other debris on the site.
41. The Licensee shall ensure that the solid waste generated from the maintenance activity is disposed of at a municipal dumpsite of the National Solid Waste Management Authority (NSWMA) and the licensee shall retain an official receipt from the NSWMA upon disposal. A copy of any receipts from the NSWMA must be submitted to the Manager, Enforcement Branch, National Environment and Planning Agency 10 Caledonia Avenue, Kingston 5 or by email to EnforcementManager@nepa.gov.jm on a quarterly basis.
42. The Permittee or its agents shall develop a Waste Management Plan which must be submitted to the Manager, Enforcement Branch at the National Environment and Planning Agency, 10 Caledonia Avenue, Kingston 5, or by email to EnforcementManager@nepa.gov.jm, within thirty (30) days before the start of the project.

The Plan shall include but not be limited to:

- The designation of appropriate waste storage areas, including for waste oil and other hazardous wastes
- Waste collection and removal schedules
- System for the supervision and monitoring of the various types of waste.

DECOMMISSIONING

43. The Permittee shall submit a Closure Plan for the 190MW power plant to the Manager of the Enforcement Branch, National Environment & Planning Agency 10 Caledonia Avenue, Kingston 5, or by email to EnforcementManager@nepa.gov.jm, within one year of the date of issue of this Permit and in any even prior to the start of operation of the facility. There shall be no commencement of operation until the Closure Plan has been submitted and approved in writing by the Agency.
44. The Permittee shall submit a Closure Plan and Site Rehabilitation Plan for the existing 220MW Old Harbour Power Plant to the Manager of the Enforcement Branch, National Environment & Planning Agency 10 Caledonia Avenue, Kingston 5, or by email to EnforcementManager@nepa.gov.jm, within one year of the date of issue of this Permit and in any even prior to the start of the decommissioning of the facility. There shall be no decommissioning of the facility until the Closure Plan and Site Rehabilitation Plans has been submitted and approved in writing by the Agency.

COMMISSIONING

45. The Permittee shall, at least two (2) weeks prior to construction and commissioning, notify the Manager, Enforcement Branch, National Environment & Planning Agency, 10 Caledonia Avenue, Kingston 5 or by email to EnforcementManager@nepa.gov.jm, the National Works Agency, and the Water Resources Authority in writing of:
- a) the date of commencement of construction of the facility
 - b) the date when the facility will be commissioned

REPORTING OPERATIONS

46. The Permittee shall, within 24 hours, notify the Local Health Authority and Manager of the Enforcement Branch, National Environment and Planning Agency (NEPA), 10 Caledonia Avenue, Kingston 5 or by email to EnforcementManager@nepa.gov.jm in the event of a malfunction of any pollution control equipment or any of its components at the power generation plant.
47. The Permittee shall, within seven (7) days of any malfunction, submit a written report to the Manager of the Enforcement Branch, National Environment and Planning Agency (NEPA), 10 Caledonia Avenue, Kingston 5 or by email to EnforcementManager@nepa.gov.jm. Every report shall contain, at a minimum, the following information:
- Time of malfunction
 - Effect of malfunction on the environment
 - Action taken to mitigate effect of the malfunction.
 - Nature of Malfunction
 - Duration of the malfunction
 - The quantity of pollutant discharged
48. In the event that the time for the completion of mitigation and repair of any malfunction will exceed seven (7) days, a work plan shall accompany the written report referenced in Specific Condition 47.
49. The results of all monitoring activities shall be recorded and compiled in a manner that reflects the true value of the monitoring exercise and shall be submitted in the form of reports to the Manager of the Enforcement Branch, National Environment and Planning

Agency (NEPA), 10 Caledonia Avenue, Kingston 5 or by email to EnforcementManager@nepa.gov.jm, with copies to the Water Resources Authority (WRA) and the Environmental Health Unit (EHU). Report shall be submitted:

- Bi annually during the first year of the operation
- Annual reports after the first year of the operation

NRCA AIR QUALITY REGULATIONS

50. The Permittee shall apply for an Air Pollutant Discharge Licence within six months after the data gathering period. The data gathering period means the period of twelve months beginning from the date on which the facility commences operation; in accordance with the NRCA Air Quality regulations, 2006.
51. The Permittee shall collect data on the operation of the power plant during the data gathering period. The data collected shall include but not be limited to:
 - Description of all fuels used in the power plant including fuel type and quality
 - Fuel consumption rate
 - Stack emissions
 - Plant efficiency
 - General operating conditions
52. Pursuant to Specific Condition 48, the results of the data collection exercise shall be compiled in a report and submitted to the Manager of the Enforcement Branch, National Environment and Planning Agency (NEPA), 10 Caledonia Avenue, Kingston 5 or by email to EnforcementManager@nepa.gov.jm every six months during the data collection period.
53. Pursuant to Specific Condition 48, a final report for the entire data collection period shall be submitted to the Agency in support of the application for the Air Pollutant Discharge Licence.

STACK EMISSION TESTING

54. The Permittee shall ensure that during construction all stacks have the necessary ports installed for conducting emission testing and that access is provided to these ports.
55. The Permittee shall ensure that during design and construction appropriate particulate matter control equipment is installed on all sources with potential to emit particulates.
56. The Permittee shall conduct stack test on all stacks at the facility 1 year after the date of commission of the facility pending the approval of the pre-test protocol by the Agency.
57. The Permittee shall ensure that the plant is designed to meet the emission standards as outlined in Schedule 12 of The Natural Resources Conservation Authority (Air Quality) Regulations, 2006.
58. The Permittee shall ensure that the plant is designed to meet the emission standards for Nitrogen Oxides (NO_x) of 40ng/J as outlined in Schedule 12 of The Natural Resources Conservation Authority (Air Quality) Regulations, 2006. A plan to meet this requirement shall be submitted to the Agency for approval prior to commencement of construction of the facility.
59. The Permittee shall procure and install Continuous Emissions Monitors (CEMs) on all Gas Turbine Generator (GTG) stack(s) in accordance with the reference methods in the Natural Resources Conservation Authority (Air Quality) Regulations 2006. CEMS shall be installed for the following parameters
 - Carbon Monoxide
 - Nitrogen Dioxide; and
 - Opacity

60. The Permittee shall ensure that Continuous Emission Monitors (CEMs) are installed and commissioned at least 1 month before the plant begins operation.

ARCHAEOLOGICAL AND ARTIFACTS PROTECTION

61. The Permittee shall consult with the Jamaica National Heritage Trust pertaining to an appropriate setback for any building or structure occurring within 3 metres (10 feet) of an archaeological or historical site.
62. The Jamaica National Heritage Trust shall be notified of any activity which may involve the excavation of an archaeological or historical site.


OTHER REQUIREMENTS

63. The Permittee shall execute a Deed of Indemnity, indemnifying the Authority and the Government of Jamaica against all actions, proceedings, claims losses, damages, injuries, demands, costs and expenses, of whatsoever kind and howsoever arising which may become payable by the Authority or the Government of Jamaica as a result of any work carried out in pursuance of this Permit.
64. The Permittee shall conduct an Environmental Audit every five years and submit a copy to the audit results to the Authority through the Manager of the Enforcement Branch, National Environment and Planning Agency, 10 Caledonia Avenue, Kingston 5, or by email to EnforcementManager@nepa.gov.jm.
65. The Authority reserves the right to require that the Permittee adopt the best available technology in the operation and management of the plant to achieve the required environmental and public health standards.
66. The granting of this Environmental Permit does not relieve the Permittee from complying with any other statutory obligation or from applying for and obtaining any other, permission, certification, permit or licence. These include but are not limited to Building Permission under the Building Act and Planning Permission under the Town and Country Planning Act.
67. Any variation or modification to the approved facility shall require the prior written approval of the Authority.

Dated this 3rd day of November, 2016



PETER KNIGHT, JP
for Natural Resources Conservation Authority



MORJORN WALLOCK
Secretary
Natural Resources Conservation Authority