



Environmental Monitoring Report

Project Number: 37905
April 2009

INDIA: Dahej Liquefied Natural Gas Terminal Project

Prepared by Anil K. Joshi
New Delhi, India

For Petronet LNG Limited

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Asian Development Bank

Ref. : PLL/ND/D-7/2K9

20th April 2009

The Director (Environment)

Forests & Environment Department,
Government of Gujarat
Block No. 14, 8th Floor, Sachivalaya,
Gandhinagar – 382010
(Fax No. : 079-23252156)

Kind Attn.: Shri J. K. Vyas

Sub.: Half-yearly Compliance Report with respect to conditions stipulated by Ministry of Environment & Forests, Govt. of India and Department of Forests, Govt. of Gujarat for Expansion of LNG Terminal at Dahej

Dear Sir,

The Compliance Report as on 31st March 2009 with respect to conditions stipulated by Ministry of Environment and Forests, Government of India and Department of Forests, Government of Gujarat for expansion of LNG Terminal at Dahej is attached.

Thanking you,

Yours faithfully,

(Anil K Joshi)
Vice President (Projects & BD)

Encl.: As above

Copy to:-

Director,
Ministry of Environment & Forest,
Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi – 110 003

Joint Director (S)
Ministry of Environment & Forests,
Regional Office, Western Region,
E-5, Kendriya Paryavaran Bhawan,
E-5 Arera Colony, Link Road-3,
Ravishankar Nagar, Bhopal – 462016
(M.P.)

NOO cc to:

- Director (Tech.) - For kind info.
- Sr. Vice President – Dahej & Kochi
- Vice President (Plant Head)

Half-yearly Compliance Report with respect to conditions stipulated by Ministry of Environment & Forests, Govt. of India and Department of Forests, Govt. of Gujarat for Expansion of LNG Terminal at Dahej as on 31.03.2009

COMPLIANCE REPORT TO THE CONDITION MENTIONED IN MOE&F LETTER NO. J-17011/11/2000-IA-III DATED 23rd NOVEMBER 2005

(A) Specific conditions

- 1) All the conditions stipulated by the Ministry vide Ministry's letter of even number dated 27.12.2000 and also Forest and Environment department, Government of Gujarat vide their letter No.ENV-10-2004-117-P dated 28.07.2005 should be effectively implemented.

Noted.

- 2) All the conditions stipulated by GPCB in their NOC No.PC/BRCH_CCA _611/28337 dated Nil should be effectively implemented.

Noted.

- 3) Quantitative risk analysis of the LNG terminal and associated facilities should be carried out taking into account the worst case scenario and based on formed up engineering design. The report should be submitted within 6 months. The central control room should be located well outside the risk zone.

The Quantitative Risk Analysis (QRA) report for Phase I Project was submitted vide our letter no. PLL/ND/D-7/2K2 dated 18th January 2002. The control room is located outside the risk zone.

The Coarse Quantitative Risk Analysis (QRA) report for the entire terminal including the Expansion Facilities submitted vide letter no. PLL/ND/D-7/2K7 dated 8th June 2007.

- 4) Based on the risk analysis, Disaster Management Plan should be prepared and submitted to this Ministry within 6 months.

Complied.

- 5) The details of the facilities to be provided by the company to the local population may be furnished within one month.

The details have been provided vide our letter no. PLL/ND/D-7/2K2 dated 18th January 2002.

- 6) The construction material shall be obtained from the approved quarries. In case new quarries need to be opened up, specific approval for the same should be obtained.

Complied.

- 7) No change in scope of work should be made without prior approval of this Ministry.

Noted.

- 8) It should be ensured that no project activities including pipeline shall fall within CRZ - I (i).

Complied.

- 9) Expansion of existing service road into Coastal Regulation Zone – I(i) areas is strictly prohibited.

Noted and complied.

- 10) The construction design relating to the project should be reviewed to ensure their safety keeping in view the seismic potential of the area.

Complied.

- 11) No ground water should be used for the project.

Complied.

- 12) The projects proponents should make specific arrangement for rain water harvesting in the project design and the rain water so harvested should be optimally utilized.

The LNG terminal is being set up very near to the coast line at Dahej where water table is very high. Moreover the sea water is brackish in that area. Preliminary investigation indicates that it might not be feasible to carry out rain water harvesting in this area. The process water requirement in LNG terminal at Dahej is nil. The sanitary waste water is being used for green belt purpose.

- 13) The project proponent will undertake mangrove a forestation in consultation with Forest department, Government of Gujarat in the adjacent area abutting the site. A detailed plan should be worked out in this regard and submitted to this Ministry within 3 months.

i) Mangroves were planted in 60,000 Sq Meters in consultation with forest department in February 2009. To increase the survival rate, area of mangrove plantation has been shifted as per advice of State Forest Department. In the next Financial Year (2009-10), mangrove plantation is planned for 4, 40,000 Sq Meters.

ii) As per GEB guide line, a green belt of 3,500 Sq Meters under power corridor has been developed on trial basis. In the next financial year (2009-10), the green belt will be extended to 30,000 Sq Meter.

- 14) The budget allocated for environment safeguarding measures shall not be diverted for any other purposes.

Noted for Compliance.

(B) GENERAL CONDITION

- 1) Construction of the proposed structures should be undertaken meticulously conforming to the existing central / local rules and regulations including CRZ notification, 1991 & its amendments. All the construction designs / drawings relating to the proposed construction activities must have approvals of the concerned State Government Departments/ Agencies.

Complied.

The construction work is complete for expanding the facilities at Dahej (i.e. Phase II) and necessary approvals obtained. Phase-II is now under commissioning and will be under full operation shortly. The Phase I is operational since April 2004.

- 2) The proponent shall ensure that as a result of the proposed constructions, ingress of the saline water into the ground water does not take place. Piezometers shall be installed for regular monitoring for this purpose at appropriate locations on the project site.

Noted & Complied. Ground water quality is analyzed regularly. During construction, no water is drawn from ground and no ingress of saline water is taking place.

- 3) Handling, manufacturing, storage and transportation of all hazardous chemicals should be carried out in accordance with MSIHC Rules, 1989 and subsequent amendments. All approvals from state and central nodal agencies including OISD, Chief Controller of Explosives, and Chief Inspectorate of Factories must be obtained. A comprehensive contingency plan in collaboration with the concerned authorities must be formulated before commissioning of the project to meet any eventuality in case of an accident.

Complied

- 4) A well-equipped laboratory with suitable instruments to monitor the quality of air and water shall be set up so as to ensure that the quality of ambient air and water conforms to the prescribed standards. The laboratory will also be equipped with qualified manpower including a marine biologist so that the marine water quality is regularly monitored in order to ensure that the marine life is not adversely affected as a result of implementation of the said project. The quality of ambient air and water shall be monitored periodically in all the seasons and the results should be properly maintained for inspection of the concerned pollution control agencies. The periodic monitoring reports at least once in 6 months must be sent to this Ministry (Regional Office at Bangalore) and SPCB.

Noted for Compliance.

Environment monitoring is being carried out through GPCB approved outsourcing agencies.

Owing to the poor quality (presence of suspended particles) of sea water at Dahej, Sea water is not being used for vaporizers or any other purpose. Instead, air heaters with glycol water mixture is used for vaporizing the LNG. Since there is no intake of sea water and out flow of water into the sea, hence it is felt that a marine biologist may not be required.

- 5) Adequate provisions for infrastructure facilities such as water supply, fuel for cooking, sanitation etc. must be provided for the labourers during the construction period in order to avoid damage to the environment. Colonies for the laborers should not be located in the CRZ area.

Complied.

- 6) To prevent discharge of sewage and other liquid wastes into the water bodies, adequate system for collection and treatment of the wastes must be provided. No sewage and other liquid wastes without treatment should be allowed to enter into the water bodies.

Complied.

- 7) Appropriate facility should be created for the collection of solid & liquid wastes generated by the barges / vessels and their safe treatment and disposal should be ensured to avoid possible contamination of the water bodies.

Contracts for engaging the vessel stipulate that the vessels comply with these requirements including MARPOL. Besides LNG vessel is berthed for only 24 hours only and it is equipped with incinerator and sewage treatment plant.

- 8) The project authorities should take appropriate community development and welfare measures for the villagers in the vicinity of the project site, including drinking water facilities. A separate fund should be allocated for this purpose.

PLL has constructed a temple at the site for the local people and has contributed towards the infrastructure in the area for roads & drinking water. A separate amount has been provided for welfare measure in the budget. Drinking water Facility provided at Temple outside & inside the company premises for nearby villagers. Repairing and resurfacing of road from Dahej crossing to GCPTCL has been carried out as a part of community development. Road facility provided from GCPTCL to company for nearby villagers.

Also following activities were taken up:

- i. **Scholarship of Rs. 10,000.00 each to 3 girls of village Lakhigam to undertake higher education.**
 - ii. **Construction of Drainage/storm water disposal pipeline of 1 mtr diameter from village Luvara at a cost of Rs. 15 lacs/-**
 - iii. **Supported Kanya kelvani initiative of Gujarat State Government and donated Rupees One lakh.**
 - iv. **Contributed Rs. 10,000/- to rural tribal school tour to Saurashtra.**
 - v. **Provided transportation during examination to the rural poor girl students during state board examinations. (located 65 Kms away from examination centers)**
- 9) The quarrying material required for the construction purposes shall be obtained only from the approved quarries / borrow areas. Adequate safeguard measures shall be taken to ensure that the overburden & rocks at the quarry site do not find their way into water bodies.

Noted and Complied.

- 10) For employing unskilled, semiskilled and skilled workers for the project, preferences shall be given to local people.

Complied.

- 11) The recommendation made in the environment management plan and Disaster Management Plan, as contained in the EIA and risk analysis reports of the project shall be effectively implemented.

Noted for Compliance.

- 12) A separate environment management cell with suitably qualified staff to carry out various environmental studies/analysis should be set up under the charge of a Senior Executive who will report directly to the Chief Executive of the Company.

Complied.

Health, Safety and Environment management cell exists at site.

- 13.) The project affected people, if any should be properly compensated and rehabilitated.

Complied.

- 14) The funds earmarked for environment protection measures should be maintained in the separate account and there should be no diversion of these funds for any other purpose. A year-wise expenditure on environmental safeguards should be reported to the ministry.

Noted for compliance.

Rs. 36.78 Lacs spent for development of Green Belt, Mangrove Plantation & Power Corridor plantation for the year 2008-09.

Rs. 39.5 Lacs expenditure proposed for maintenance of green belt and Rs 29.6 Lacs expenditure proposed for development of Green Belt, Mangrove Plantation & Power Corridor plantation for the year 2009-10.

- 15) Full support should be extended to the officers of this ministry's regional office at Bhopal and the officers of the central and state pollution control boards by the project proponents during their inspection for monitoring purposes by furnishing full details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.

Noted & Agreed.

- 16) In case of deviation or alteration in the project including the implementing agency, a fresh reference should be made to the ministry or modification in the clearance conditions or impositions of new ones for ensuring environmental protection. The project proponents should be responsible for implementing the suggested safeguard measures.

Noted & Agreed.

- 17) The Ministry reserves the right to revoke this clearance, if any of the conditions stipulated are not complied with to the satisfaction of this ministry.

Noted & Agreed.

- 18) This Ministry or any other competent authority may stipulate any additional conditions subsequently, if deemed necessary, for environmental protection, which shall be complied with.

Noted & Agreed.

- 19) The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the state pollution control board and may also be on the web site of the ministry of environment & forest at <http://www.envfor.nic.in>. The advertisement should be made within 7 days from the date of issue of clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bhopal.

Complied.

- 20) The project proponents should inform the regional office as well as the ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.

Noted and Complied.

Expansion project is complete.

Compliance to conditions as conveyed by Department of Forests & Environment, Govt. of Gujarat, Letter No. ENV-10.2004-117-P dated 28th December, 2005

1. The provisions of CRZ notification of 1991 and subsequent amendments issued from time to time.

Noted

2. The PLL shall obtain necessary permissions from different Government Departments / Agencies before commencing the expansion activities.

The construction work is complete for expanding the facilities at Dahej (i.e. Phase II) and necessary approvals obtained. Phase-II is now under commissioning and will be under full operation shortly. The Phase I is operational since April 2004.

3. No effluent or sewage shall be discharged into the sea / creek or in the CRZ area and shall be treated to confirm the norms prescribed by the Gujarat Pollution Control Board and would be reused / recycled within the plant premises.

Noted

4. All the recommendations and suggestion given by the NIOT and WAPCOS in their Environment Impact Assessment reports shall be implemented strictly.

Noted.

5. The PLL shall be paid the cost of the external agency that may be appointed by this department for supervision / monitoring of the project activities during construction / operational phases.

Noted.

6. The PLL shall have to contribute financially to support the National Green Corps Scheme being implemented in Gujarat by the GEER Foundation, Gandhinagar, in consultation with Forests and Environment Department.

Agreed.

7. A six monthly report on compliance of the conditions mentioned in this letter shall have to be furnished by the PLL on regular basis to this Department.

Noted for compliance.

8. Any other condition that may be stipulated by this Department from time to time for environmental protection / management purpose shall also have to be complied with by the PLL.

Noted.

9. The PLL shall prepare and regularly update their Local Oil Spill Contingency and Disaster Management Plan in consonance with the National Oil Spill and Disaster Contingency Plan.

Complied.

10. The Gujarat Maritime Board shall initiate for the Vessel Traffic Management system for the Gulf of Khambhat and would work out the modus operandi for cost sharing by the different players in the Gulf including the PLL. The PLL shall contribute for the same as may be decided by the Gujarat Maritime Board.

Noted.

11. The PLL shall bear the cost of the external agency that may be appointed by this Department for supervision / monitoring of proposed activities and the environmental impacts of the proposed activities.

Noted.

General Conditions:

12. The ground water shall not be tapped to meet with the water requirements in any case.

Complied.

13. The PLL shall take up massive mangrove plantation activities as well as greenbelt development activities in consultation with the Gujarat Institute of Desert Ecology / Forest department.

i) Mangroves were planted in 60,000 Sq Meters in consultation with forest department in February 2009. To increase the survival rate, area of mangrove plantation has been shifted as per advice of State Forest Department. In the next Financial Year (2009-10), mangrove plantation is planned for 4, 40,000 Sq Meters.

ii) As per GEB guide line, a green belt of 3,500 Sq Meters under power corridor has been developed on trial basis. In the next financial year (2009-10), the green belt will be extended to 30,000 Sq Meter.

14. The PLL shall have to contribute financially for taking up the socio-economic upliftment activities in this region in consultation with the Forest and Environment Department and the District Collector / District Development Officer.

PLL has constructed a temple at the site for the local people and has contributed towards the infrastructure in the area for roads & drinking water. A separate amount has been provided for welfare measure in the budget. Drinking water Facility provided at Temple outside & inside the company premises for nearby villagers. Repairing and resurfacing of road from Dahej crossing to GCPTCL has been carried out as a part of community development. Road facility provided from GCPTCL to company for nearby villagers.

Also following activities were taken up:

- **Scholarship of Rs. 10,000.00 each to 3 girls of village Lakhigam to undertake higher education.**
- **Construction of Drainage/storm water disposal pipeline of 1 mtr diameter from village Luvara at a cost of Rs. 15 lacs/-**
- **Supported Kanya kelvani initiative of Gujarat State Government and donated Rupees One lakh.**
- **Contributed Rs. 10,000/- to rural tribal school tour to Saurashtra.**
- **Provided transportation during examination to the rural poor girl students during state board examinations. (located 65 Kms away from examination centers)**

15. Environmental Audit report indicating the changes, if any with respect to the baseline quality, in the coastal and marine environmental shall be submitted every year.

Noted

16. The PLL shall have to contribute financially to support the National Green Corps Scheme being implemented in Gujarat by the GEER Foundation, Gandhinagar, in consultation with Forests and Environment Department.

Noted.

17. A six monthly report on compliance of the conditions mentioned in this letter shall have to be furnished by the PLL on regular basis to this Department.

Noted for compliance.

18. Any other condition that may be stipulated by this Department from time to time for environmental protection / management purpose shall also have to be complied with by the PLL.

Noted.