

F. No. J-11011/316/2014- IA II (I)
Government of India
Ministry of Environment, Forest and Climate Change
(I.A. Division)

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Dated 22nd January, 2016

To,

Dr. J S Sharma
M/s Oil & Natural Gas Corporation Ltd. (ONGCL)
Scope Minar, Laxmi Nagar
Delhi

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Subject: Development drilling of 45 wells at Block KG-DWN-98/2, KG offshore, Tehsil Allavaram, District East Godavari, Andhra Pradesh by M/s ONGC Ltd.- Consolidated Environmental Clearance and CRZ Clearance reg.

Ref.: Your online proposal no. IA/AP/IND2/26940/2014 dated 25th February, 2015.

Sir,

This has reference to your online proposal no. IA/AP/IND2/26940/2014 dated 25th February, 2015 alongwith project documents including Form 1, Prefeasibility Report, Draft Terms of References and EIA/EMP report on the above mentioned subject.

2.0 The Ministry of Environment, Forest and Climate Change has examined your application. It is noted that the proposal is for development drilling of 45 wells at Block KG-DWN-98/2, KG offshore, Tehsil Allavaram, District East Godavari, Andhra Pradesh by M/s ONGC. The NELP-I offshore block KG-DW N-98/2 is located off the coast of Godavari Delta in the east coast of India. Total area of the block is spread over 7294.6 sq. Km and located 25-80 km from the coast. The block is divided into two i.e. Northern Development Area (NDA) is deep waters where water depth ranging upto 1800 m and Southern Development Area (SDA) is Ultra-Deep waters with water depth ranging upto 3100 m. The present proposal is submitted for development in Northern Development Area whereas development of Southern Development Area is not envisaged as of now. NDA is further divided into Cluster - 1 & Cluster -2.

- **Cluster 1** - Predominantly gas, located in the north of NDA, includes fields D, E and G4. Within Cluster 1 lies the G4 field (Nominated Godavari PML Block)
- **Cluster 2** – Mixture of oil and gas, located in the south of NDA, includes the following fields:
 - Oil fields (Cluster 2A) – A2, P1, M3, M1 and G-2-2
 - Gas fields (Cluster 2B) – R1, U3, U1, and A1.

The following facilities have been proposed to be set up as a part of development drilling in NDA Offshore NELP-I Block KG-DWN-98/2 of KG Basin, Andhra Pradesh:

1. Development drilling of 45 Offshore well
2. Floating Production Storage Offloading (FPSO),
3. Fixed Offshore Platform
4. Subsea Equipment
5. Sub-sea pipeline.
6. Onland Terminal

From **Cluster- 1** the gas will be evacuated through 18" – 16.1 Km dual subsea pipeline connecting to the fixed platform. From this platform de-hydrated gas will be transferred to already existing onland terminal at Odalarevu by 20"- 35.5 Km sub-sea pipeline. This pipeline will not be exposed at any location as it will be laid 2 m below the surface and will be connected directly to the GAIL custody transfer point located in onland terminal outside the CRZ area.

From **Cluster-2** the Hydrocarbon fluids will be taken to an FPSO (Floating Production Storage Offloading) facility through 18" – 21.5 Kms dual subsea pipeline. The stabilized crude oil will be transported through sea tankers and compressed and dehydrated Gas will be evacuated on to Fixed platform, through 18" – 21.4 Kms dual subsea pipeline with an option of evacuating from FPSO to Odalarevu Onshore Terminal through 22" – 34.3 Kms subsea pipeline (will be laid 2 m below surface) reaching already existing onland terminal to GAIL for custody transfer. Utilities/Offsites & Miscellaneous system such as plant and instrument air system; nitrogen system; water system; circulating hot oil system; fuel gas system; power generation system; chemical injection system; Diesel System; Flare and Drain System; Fire water system etc. will be installed.

3.0 Forest Clearance for diversion of 0.44 ha. of forest land for laying of gas/oil pipeline to Odalarevu onland terminal issued by MoEF&CCREgional Office, Bangalore vide letter no. 4-APB141/2005-BAN dated 16th December, 2005 is submitted. It is reported that there are no eco-sensitive areas or forest or wild life sanctuaries within the 10 km of project area. SCZMA, Andhra Pradesh vide their letter no. 1742/Env/CZMA/2015 dated 21st May, 2015. SCZMA has recommended the case for sub-sea pipeline transfer to onland terminal. Cost of project is Rs. 53, 058 crores. Drilling Depth of the Wells varies from 2000 to 3000 m from seabed. Water depth varies from 320 – 3100 m. Nearest point is approx. 25 Km from Sea East Coast.

4.0 Waste Heat Recovery System (WHRS) will be installed at exhaust of Gas Turbine. Low NOx burner will be installed in gas turbine to reduce NOx emissions. Adequate Flare system will be installed. Water requirement will be 30m³/day during drilling operation. WBM will be used. Produced water separated during crude oil and gas processing will be treated in Effluent Treatment Plant (ETP) and sent for injection into disposal wells below 1000 m depth as per CPCB guidelines. Sewage generated from onshore facility will be treated in the Sewage Treatment Plant (STP). The treated effluent will be reused for horticulture purpose. During laying of pipeline the top soil recovered during land clearance will be stockpiled separately and will be used for backfilling the trench in order to restore the original soil condition. As regard to offshore drilling, sewage will be treated on-board of the rig. Residual chlorine of the treated sewage will not exceed 1mg/L before disposal. Drilling and wash

water will be treated to conform to limits notified as per MARPOL Regulations, before disposal into sea. The treated effluent will be monitored regularly. WBM will be disposed off as per G.S.R. 546 (E); dated 30/08/05, according to which WBM will be recycled to maximum extent. All fuels, lubricants and chemicals will be kept in a well-designed storage facility with regular inventory checking. Used and unused chemicals will be stored in a lined & bounded area. Waste oil/spent oil/waste batteries will be sold to registered recyclers/re-processors.

5.0 All the projects related to offshore and onshore Oil and Gas exploration, development and production are listed in para 1(b) of schedule of EIA Notification, 2006 covered under category 'A' and appraised at central level.

6.0 Public hearing/public consultation was exempted as offshore drilling will be carried out beyond 12 nautical miles.

7.0 The proposal was considered by the Expert Appraisal Committee (Industry) in its meetings held during 29th-30th October, 2014, 16th-17th March, 2015 and 16th-17th June, 2015 respectively. Project Proponent and the EIA Consultant namely M/s ONGC, New Delhi have presented EIA / EMP report as per the TOR. EAC has found the EIA / EMP Report and additional information to be satisfactory and in full consonance with the presented TORs. The Committee recommended the proposal for environmental clearance.

8.0 Based on the information submitted by the project proponent, the Ministry of Environment and Forests hereby accords environmental clearance to above project under the provisions of EIA Notification dated 14th September 2006, subject to the compliance of the following Specific and General Conditions:

A. SPECIFIC CONDITIONS :

- i. Only high efficiency DG set with adequate stack height and modern emission control equipment and low sulphur clean diesel shall be used. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution.
- ii. CRZ clearance shall be obtained.
- iii. Gas produced during testing shall be flared with appropriate flaring booms.
- iv. The flare system shall be designed as per good oil field practices and Oil Industry Safety Directorate (OISD) guidelines. The stack height shall be provided as per the regulatory requirements and emissions from stacks will meet the MOEF/CPCB guidelines.
- v. Total water requirement shall not exceed 30 m³/day and prior permission shall be obtained from the Competent Authority for the drawl of water. Only water based mud system shall be used.
- vi. Water based drilling mud shall be discharged to the sea after proper dilution as per E(P) Rules vide G.S.R 546(E) dated 30th August, 2005.
- vii. The Company shall ensure that there shall be no impact on flora fauna due to drilling of wells in the offshore sea. The company shall undertake conservation measures to protect the marine animals/biota in the region. The company shall monitor the petroleum hydrocarbons and heavy metals concentration in the marine fish species regularly and submit report to the Ministry.
- viii. Treated wastewater (produced water or formation water) shall comply with the marine disposal standards notified under the Environment (Protection) Act, 1986. Sewage treatment on board of the rig as per MARPOL regulation. Residual chlorine shall not exceed 1 mg/l before disposal. Standard for injection produced water into confined hydrocarbon reservoir structure at more than 1000 m with oil in water content of less than 10 ppm shall be complied.

- ix. The drill cutting (DC) wash water shall be treated to conform to limits notified under the Environment (Protection) Act, 1986, before disposal into sea. The treated effluent shall be monitored regularly.
- x. All the guidelines shall be followed for the disposal of solid waste, drill cutting and drilling fluids for onshore and offshore drilling operation notified vide GSR.546(E) dated 30th August, 2005. Different types of wastes shall be kept segregated.
- xi. High efficiency equipment shall be used to separate solids, hydrocarbons and water such as shale shakers with improved capacity to filter smaller solids, low shear pumps for use in produced water shall be employed.
- xii. Good book keeping practices shall be put in place to manage wastes such as waste tracking program i.e. identify where and when the waste generated, the type of waste and its volume, the disposal method and its location, and the personnel responsible for the waste management.
- xiii. A waste minimisation plan shall be developed and followed through proper inventory management following best practices in drilling operations, good housekeeping practices and optimised equipment maintenance schedules.
- xiv. Only essential rig personnel shall be on board the rig. Emergency Response Plan and health, safety and environment (HSE) system shall be installed. Geo- hazard and geotechnical studies shall be carried out to ensure safe drilling operations.
- xv. All the hazardous waste generated at the rig/offshore facility shall be properly treated, transported to on shore and disposed of in accordance with the Hazardous Waste (Management, Handling and Transboundary Movement) Rules 2008. No waste oil shall be disposed off into sea. Waste/used oil shall be brought on-shore and sold to MOEF/CPCB authorized recyclers/re-processors only.
- xvi. Requisite infrastructure facilities shall be provided near the offshore installations so that booms and skimmers/chemical dispersants could be deployed immediately in case of oil leakage from the installations. Efforts shall be made to curtail the oil slick within 500 meters of the installation and accordingly, action plan and facilities to check the oil slick within 500 meters shall be provided.
- xvii. Approval from DG Shipping under the Merchant Shipping Act prior to commencement of the drilling operations shall be obtained. At least 30 days prior to the commencement of drilling, the exact location shall be intimated to the Director General of Shipping and the Company shall abide by any direction he may issue regarding ensuring the safety of navigation in the area.
- xviii. The International 'Good Practices' adopted by the Petroleum Industry viz International norms to safeguard the coastal and marine biodiversity shall be implemented by the company.
- xix. The design, material of construction, assembly, inspection, testing and safety aspects of operation and maintenance of pipeline and transporting the natural gas/oil shall be governed by ASME/ANSI B 31.8/B31.4 and OISD standard 141.
- xx. The project proponent shall also comply with the environmental protection measures and safeguards recommended in the EIA /EMP/RA/NIO report.
- xxi. Full drawings and details of Blow Out Preventor to encounter well kick due to high formation presence, if encountered, shall be submitted to the Ministry's Regional Office within 3 months of the issue of environment clearance.
- xxii. On completion of activities, the well shall be either plugged and suspended (if the well evaluation indicates commercial quantities of hydrocarbon) or killed and permanently abandoned with mechanical plugs and well cap. If well is suspended, it shall be filled with a brine solution containing small quantities of inhibitors to protect the well. The position at the end of the activities shall be communicated in detail to the Ministry indicating the steps taken i.e. whether all the wells are plugged or abandoned and necessary precautions taken.
- xxiii. A brief report on environmental status & safety related information generated and measures taken as well as frequency of such reporting to the higher Authority shall be submitted to this Ministry and its respective Regional Office at Bangalore.

- xxiv. Petroleum and Natural Gas (Safety in Offshore Operations) Rules 2008 of OISD shall be strictly adhered to.
- xxv. Recommendations mentioned in the Risk Assessment & Consequence Analysis and Disaster Management Plan shall be followed.
- xxvi. Adequate funds both recurring and non-recurring shall be earmarked to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes.
- xxvii. Petroleum and Natural Gas (safety in Offshore Operations) Rules 2008 of OISD shall be strictly adhered to.
- xxviii. Concrete plan of action for Enterprise Social Responsibility consisting 2.5 % of project cost shall be prepared in consultation with the District Authority and the local people and a mechanism for it monitoring should be worked out. Action plan shall be submitted to MoEF's RO Office for monitoring.

B. SPECIFIC CONDITIONS IN RESPECT OF CRZ:

- i) All the recommendations and conditions specified by AP Coastal Zone Management Authority (APCZMA) vide letter no. 1742/Env/CZMA/2015 dated 21.05.2015 shall be complied with.

C. GENERAL CONDITIONS:

- i. The project authorities must strictly adhere to the stipulations made by the Andhra Pradesh Pollution Control Board (APPCB), State Government and any other statutory authority.
- ii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.
- iii. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be followed.
- iv. The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.
- v. The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
- vi. The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.
- vii. Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.

- viii. The company shall also comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing relating to the project shall be implemented.
- ix. The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.
- x. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.
- xi. A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.
- xii. The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.
- xiii. A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parisad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.
- xiv. The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and APCCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.
- xv. The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.
- xvi. The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at www.moef.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.
- xvii. The project authorities shall 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 the project.

9.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.



10.0 The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.

11.0 The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Water Pollution) Act, 1981, the Environment (Protection) Act, 1986 Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendments and rules.



(Lalit Bokolia)
Additional Director

Copy to:-

1. The Principal Secretary, Department of Environment, Forest, Science & Technology, Government of Andhra Pradesh, Hyderabad, A.P.
2. The Chief Conservator of Forests, Regional Office (Southern Zone, Bangalore)KendriyaSadan, 4th Floor, E&F Wing, II Block Koramangala, Bangalore-560034.
3. The Chairman, Central Pollution Control Board PariveshBhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
4. The Chairman, Andhra Pradesh Pollution Control Board, ParyavaranBhawan, A-III, Industrial Estate, Sanath Nagar, Hyderabad - A.P.
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhavan, *Jorbagh Road*, New Delhi.
6. Guard File/Monitoring File/Record File.



(Lalit Bokolia)
Additional Director

