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for n.a.p.  
25.9.06*

F. No. J-11011/3/2006- IA II (I)  
**Government of India**  
**Ministry of Environment and Forests**  
**(I.A. Division)**

**Paryavaran Bhawan**  
**CGO Complex, Lodhi Road**  
**New Delhi – 110 003**

**E-mail : pb.rastogi@nic.in**  
**Talefax : 011-24367668**

Dated 22<sup>nd</sup> September, 2006

To, ✓  
Shri Ram Prakash Pandey  
Chief Executive Officer  
M/s Indian Strategic Petroleum Resource Limited  
424-425, World Trade Centre, Babar Road  
New Delhi – 110 001.

**E-mail : isprlindia@gmail.com**

**Subject : Construction of 1 MMT Strategic Crude Oil Storage Facilities in Underground Rock Caverns at Vishakapatnam in Andhra Pradesh M/s Indian Strategic Petroleum Resource Limited (ISPRL).**

Sir,

This has reference to your letter no. ISPRL/MOE&F dated 21<sup>st</sup> August, 2006 on the above subject alongwith Schedule-II application, questionnaire, EIA/EMP/Risk assessment report/Disaster Management Plan.

2.0 The Ministry of Environment and Forests has examined your application. It is noted that the proposal submitted by M/s Indian Strategic Petroleum Resource Limited (ISPRL) is for setting up of 1 MMT Strategic crude oil storage facilities at Visakhapatnam, A. P. in E-W striking hill range terminating along the shore-line near Dolphin's nose. The site is uninhabited hilly terrain, barren rock and partly abandoned rock quarry and is 0.8 km from estuary/sea at Visakhapatnam. No forest land, rehabilitation and resettlement is involved. No threatened, endangered or rare plant species and their habitat have been found near the project site. Total land required for the project at Visakhapatnam is 27 ha.

3.0 Crude oil caverns will be two sets of 'U' shaped tunnels with a 'D' shaped cross section below sea level. Dolphin's nose hill in between the seashore and project site will act as a natural barrier against cyclones or any other such activities. The crude oil storage facility will consist of two crude qualities in 2 separate storage units. The storage of oil in underground rock caverns will employ ground water pressure for containing the product within an unlined rock cavern. The rock formations at both the sites in conjunction with ground water condition will be used for storage of oil in caverns (20 m pass X 25-32 m high) and will be located at least 30 m below the rock surface. No processing/production is involved during the operation of the cavern system since the proposed project is only for receipt, storage and handling of crude oil in bulk quantity. Crude oil will be received and dispatched through pipeline only. 351.2 m<sup>3</sup>/d water will be required and

sourced from Visakhapatnam Municipal Corporation water supply. The project is for storage of crude oil and no process effluent will be generated during the operation leading to 'zero' discharge. The seepage wastewater will be treated in oil separator (API/TPI/CPI) and taken back into the cavern and recycled into the water curtain system. Oily sludge generated will be disposed off within project premises through storage in imperviously lined pits.

4.0 'Public hearing meeting was held on 11<sup>th</sup> July, 2006. 'No Objection Certificate' has been accorded by the APPCB vide letter no. 140/PCB/VSP/VSP/CFE/HO/2006 dated 19<sup>th</sup> July, 2006. Total cost of the project is Rs. 672.00 Crores.

5.0. The Ministry of Environment and Forests hereby accords environmental clearance to the above project under the provisions of EIA Notification dated 27th January, 1994 as amended subsequently subject to strict compliance of the following specific and general conditions.

#### **A. SPECIFIC CONDITIONS :**

##### **1). CONSTRUCTION PHASE :**

- i. All the precautions shall be taken for proper rock blasting during construction of shafts and cavern galleries to reduce vibrations. It is recommended that Mining Engineer with experience in underground mine may be employed for construction of the cavern and the shaft.
- ii. All the project facilities shall be designed with proper structural stabilities to withstand the cyclonic winds (~250 kmph) and seismic MSK VII / VIII to avoid potential operation hampers during natural disasters.
- iii. All the proper safety measures shall be taken for the construction workers to avoid accidents during underground construction activities. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act. Insurance shall be taken for all the employees working during construction of underground cavern and a copy of the policy shall be submitted to the Ministry.
- iv. All the rock debris generated shall be used at the pre-identified site within the project premises. Effort shall also be made to use the debris for other useful purposes such as extension or strengthening of break waters or construction work etc. Accordingly, approach roads shall be stringthread / indented / coal tar (Bitumen) lined to facilitate heavy vehicular traffic for transportation of excavated rock material.
- v. Suitable arrangements shall be made for the treatment and proper disposal of domestic wastewater generated by labour during the construction. The construction workers shall be provided with adequate basic facilities including shelter, water supply and sanitation facilities.
- vi. Suitable dust suppression methods shall be provided to control the dust generated during the excavation, leveling and transportation activities.

- vii. The rocks have crevices through which groundwater will seep and provide a water curtain around the stored crude. The project proponent shall observe the ground water table conditions and monitor the quality of ground water regularly due to uncertainties associated with the water balance and water crude oil interface. Adequate remedial measures shall be adopted to prevent ground water contamination.
- viii. The ground and seepage water pumped out from the cavern shall be suitably stored and treated to ensure compliance with prescribed standards.
- ix. The storage and handling of hazardous materials such as explosives / chemicals, detonators, petroleum lubricants etc. at the site during construction phase shall be as per the prescribed regulatory norms.
- x. All the necessary precautions for laying proposed 3 km pipeline mentioned in the ANSI code shall be strictly followed. Continuous sensors/digital control system or SCADA system shall be installed for monitoring the pipeline. Regular monitoring of corrosion and fatigue of pipelines, valves, heat exchangers, cables etc. shall be carried out at scheduled intervals.
- xi. Efforts shall be made to mitigate any adverse impact on marine fish production as fishing activity in the project area constitutes major economy in the region and livelihood to fishermen.

## **2). OPERATION PHASE :**

- i. Ambient air quality for SO<sub>2</sub>, NO<sub>x</sub>, HCs, CO and secondary air pollutants (Aldehydes, Oxidants) shall be regularly monitored at requisite numbers of ambient air quality monitoring stations in consultation with APPCB at and around the proposed project site based on occurrence of maximum ground level concentration and down wind direction of wind i.e. maximum impact zone.
- ii. The possibility of hydrocarbon vapour recovery and re-injection back into the cavern system during crude oil filling, discharge and excess pressure / safety vent operation periods shall be explored and implemented in view of large volume of caverns to prevent significant loss of HCs as well as mitigate air pollution impacts. Suitable HCs / VOCs monitors shall be installed at critical locations (Pumps, Valves, Flanges, Joints, Bends in pipeline etc.) with compatible on-line data recording and alarm system at the control room. Low Sulphur fuels like LSHS, HSD, Naphtha etc. shall be used.
- iii. Measures shall be taken for provision of double mechanical seals in pumps / compressors operated at surface facilities and maintenance of valves and other equipments.
- iv. The water requirement from Visakhapatnam Municipal Corporation shall not exceed 352 KLD. The proposed physical treatment of seepage water contaminated with oil & grease (through API/TPI/CPI) shall be supplemented with biological treatment dual media filters for proposed reuse of all the treated effluent. The treated effluent after treatment shall comply with the standards stipulated by APCB / CPCB. A treated effluent pond (open) with minimum five days retention



capacity shall be constructed for conducting bio-assay test prior to reuse of treated effluent. All the units of the ETP shall be impervious to prevent ground water leakage. No wastewater will be discharged outside the project premises. The domestic wastewater at storage location will be treated in septic tank and discharged to soak pits to be reused for the green belt development within the plant premises.

- v. The ground water quality as well as coastal marine water quality monitoring with special reference to oil & grease as well as hydrocarbons shall be done at different locations around the project site in consultation with APPCB as per the general discharge standards applicable to coastal marine discharges and specific discharge standards stipulated by the APPCB. Ground water monitoring with respect to quality (oil & grease; Sulfides/Sulfates) as well as water table variations at different locations shall be carried out in consultation with APPCB / SGWB / CGWA.
- vi. The ETP sludge shall be disposed off in the TSDF, Vishakapatnam, A.P. The de-waxing sludge generated shall be either properly disposed off or supplied to M/s HPCL for further treatment and disposal as proposed.
- vii. The oily sludge collection, transportation, storage and disposal shall be strictly as per prevailing Hazardous Waste (Management and Handling) Rules, 1989 and its amendments.
- viii. As mentioned in the REIA/EMP, 50 m green belt shall be developed along the boundary of the industry to mitigate the effects of fugitive emissions all around the plant in consultation with DFO as per CPCB guidelines.
- ix. Rainwater harvesting (RWH) shall be carried out at project site keeping in view the runoff from adjacent hill slopes towards proposed surface facilities to conserve and reduce the water consumption. The proponent shall ensure that effluent shall not enter the Rainwater harvesting structure.
- x. All the recommendations / precautions mentioned in the Risk Assessment and Disaster Management Plan shall be strictly followed.

#### **B. GENERAL CONDITIONS:**

- i. The project authorities must strictly adhere to the stipulations made by the A. P. State Pollution Control Board and the State Government. All the statutory approvals for the construction of underground cavern and tunnels etc. shall be obtained from the concerned Statutory Authorities and a copy submitted to the Ministry. Standards issued by the Oil Industries Safety Directorate (OISD) and other national and international bodies and guidelines shall be followed.
- ii. No expansion or modernization in the system shall be carried out without prior approval of the Ministry of Environment and Forests.
- iii. At no time, the emissions shall go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit

shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.

- iv. All the recommendations made in the EIA/EMP report and risk assessment report shall be implemented.
  - v. The overall noise levels in and around the installation shall be kept well within the standards (85 dBA) 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 EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
  - vi. The project authorities must strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of Explosives must be obtained before commissioning of the project.
  - vii. The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules, 2003. Authorization from the A. P. Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.
  - viii. As mentioned in the REIA/EMP, project authorities shall provide Rs. 2.00-4.00 Crores and Rs. 20.00 Lakhs/annum towards capital cost and recurring expenditure for environmental pollution control measures 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 should not be diverted for any other purposes.
  - ix. The stipulated conditions will be monitored by the Regional of this Ministry at Bhubaneswar / CPCB / APPCB. A six monthly compliance report and the monitored data shall be submitted to them regularly.
  - x. 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 A.P. Pollution Control Board / Committee and may also be seen at Website of the Ministry of Environment and Forests at <http://www.envfor.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 Regional office.
  - xi. 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 commencing the land development work.
- 6.0. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.



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


8.0. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management and Handling) Rules, 2003 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

 22/9/06

**(Dr. P. B. Rastogi)**  
**Additional Director**

Copy to :

1. The Secretary, State Department of Environment and Forests, Govt. of Andhra Pradesh, Mantralaya, Hyderabad, A.P.
2. The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi – 110032.
3. The Chairman, Andhra Pradesh State Pollution Control Board, 2<sup>nd</sup> Floor, HUDA Complex, Maitrivaram, S.R. Nagar, Hyderabad – 500 038, A. P.
4. The Chief Conservator of Forests (Central), Ministry of Environment & Forest, Regional Office (SZ), Kendriya Sadan, IV<sup>th</sup> Floor, E&F Wing, 17<sup>th</sup> Main Road, Koramangla, Bangalore - 560 034, Karnataka.
5. JS (CCI-I), Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi. - 110003.
6. Monitoring Cell, Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, New Delhi-110003.
7. Guard file.
8. Record file
9. Monitoring file.

  
**(Dr. P. B. Rastogi)**  
**Additional Director**