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NOTE

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From: A.B.Chakraborty, GM-Head HSE, BCB-II, Mumbai
To: Shri S.Vasudeva, Head-Corporate Communication, New Delhi

Subject: Global Compact Principles—A draft on specific points

Kindly refer to your telecon regarding environment related information on the principles 7, 8 & 9 of Global Compact for inclusion in the ONGC annual report. details are as under:

PRINCIPLE 7: Business should support a precautionary approach to environmental challenges

Keeping in view the long term sustainable development by addressing environmental issues, the environment policy was issued in 1983 which covers all the environmental aspects significant to the organization's activities, operation and product. One of the ONGC's corporate missions is "Abiding commitment to Health, Safety and Environment to enrich quality of community life".

To make environment and company business mutually supportive, due concern towards environment protection is built at the design stage of the facilities. National & international environmental standards/guidelines are followed and adopted at all work centers. Exploration and Production of oil & gas is specialized job, cost intensive and involves associated environmental effects. Suitable precautionary steps are undertaken / initiated to meet the environmental challenges. As a proactive measure, hazards have been assessed, control measures are in place and in the event of need there is emergency preparedness. The exploration, production, processing and refining of hydrocarbons result in generation of oily liquid effluent, a range of hazardous wastes namely chemical sludge, tank bottom sludge, drill cuttings, left over chemicals, drilling fluids, brines, chemicals and oil containers etc. Steps to meet the environmental challenges are adequately taken care of by the following:

Environment management systems:

Environment management system based on ISO 14001 has been adopted and implemented in the organization since 1998. During 2000-01, two installations were certified to ISO 14001, during 2001-02, four more installations were certified and in 2002-03, 33 installations were certified during 2003-04 we expect to cover all major installations as currently the implementation is continuing at over 60 installations at different stages. This is to ensure EMS benchmarking to International Standards.

Oil spill control and response management:

Besides equipping with the Tier-I facilities as required under the National oil spill disaster contingency plan (NOS-DCP), we have taken the membership of the Oil spill response Ltd., U.K. (OSRL) - A Tier-III center to seek assistance if required. The Oil Spill response contingency plan duly approved by the Coast Guard, is in place.

PRINCIPLE 8: Undertake initiatives to promote greater environmental responsibility

In ONGC, it is our endeavor to achieve higher standards beyond the statutory requirements and excel in all spheres including environmental performance. Some of the activities / initiatives mentioned below ensure greater environmental responsibility.

Environment Impact Assessment:

EIA study is a valuable tool in eliminating or mitigating the undesirable effects on the environment. A comprehensive EIA has already been undertaken earlier for the Western offshore areas. For any new project or expansion, environmental clearance is obtained as a statutory requirement and EIA along with risk assessment forms part of the study undertaken through reputed institutes like NEERI.

Air emission monitoring and control:

The system of online monitoring and mobile air monitoring labs (Van) is in place and the data is monitored on regular basis. Besides obtaining the air / water consents from SPCBs, the environment statements are submitted on regular basis. Third party monitoring is also undertaken by the SPCB approved agencies.

Abandonment/restoration of sites:

Drill sites which are not required after exploration assessments, are restored to its normal surroundings and adequate compensation is paid to the land owners for the same.

Green belt development program:

We have an yearly program of **tree plantation** in place since 1989. Guidelines have been issued for tree plantation. Special drive has been undertaken towards the mangrove plantations in the past three years at identified marine coastal areas.

Marine ecological survey:

Pre monsoon and post monsoon Marine **environmental monitoring** is undertaken by IPSHEM utilizing the scientific vessel and following a cruise grid plan. This is to ensure that the marine organisms are not affected due to offshore operations.

Global warming concerns:

All possible efforts are continuing to ensure reduction of emissions that contribute to global warming. The gas flaring has been reduced significantly and "Zero gas flaring" has been given special impetus. Phasing out of the HALON- the fire extinguishing medium, with suitable substitute is in progress, to fulfill the Montreal Protocol recommendations.

Corporate environmental reporting:

We are in the process of developing suitable methodology to bring in place the Corporate Environmental Reporting, as is being done by other International majors.

It would be based on the "Global Reporting Initiative (GRI)" Guidelines. Suitable consultant for the job is under finalization.

PRINCIPLE 9: Encourage the development and diffusion of environmental friendly technologies

Some of the environmentally sound technologies adopted are as under:

Liquid effluent management:

We have 21 onland effluent treatment plants which are adequate to handle the current level of effluent generated. More ETPs have been planned. In Offshore, we have the produced water conditioners and sewage treatment plants to handle liquid effluents. Third party audit of all ETPs was undertaken by NEERI, Nagpur during July-Aug 2002 to ensure that the functioning is in conformity to required standards. The audit reports have been received and wherever necessary, the action plan has been drawn for rectification / improvement.

Solid waste management:

Collection and disposal of solid wastes is accorded priority. Different types of solid wastes generated offshore are brought to shore for disposal. Some of the solid waste (Chemical sludge) is disposed off in secured landfill sites which are duly approved by SPCBs. The storage facilities as sludge lagoons have been created.

Bio degradation / remediation program:

We have an Institute (INBIGS) which is devoted towards bio-technology and tectonic studies. Different types of microbes (Bacteria) have been developed which are used for the Bio-remediation program. Bio-remediation program by using IOC-TERI Super Zapper Bacteria as a pilot project is also currently in hand.

Clean development mechanism (CDM):

Replacement of equipment / Machines / processes with reduced energy consumption and emissions, is accorded top priority and long term plan has been drawn for implementation in phases at the Installations. Various cleaner technologies to reduce the pollution load and to conserve natural resources have been implemented / continuing. There is scope of earning **Emission Reduction Credits** along with improving the environmental performance. The CDM issues are under active consideration for future scope & work.

To reduce, recover, recycle and reuse the wastes / emissions for conserving natural environment, more clean technologies have been implemented / continuing at all major installations. Some of these are the following

- Modification of the flare tips to ensure complete combustion of any emissions
- Recycling low pressure gas to ensure minimal flaring and resource conservation
- Use of treated oil field effluent for reservoir injection (pressure maintenance) thereby conserving water
- Recycling of tank bottom sludge, lead- acid and lead-nickel batteries, spent oil and empty chemical / POI, containers etc.
- Bio-remediation of oily sludge and the soil soaked with spilled oil
- In the desalter plant, the salt content of the crude oil is removed making it environment friendly for the refineries
- In the sulphur recovery system, the gas and condensate carrying H₂S gas is treated in sulphur recovery unit wherein liquefied oxidation catalytic process is used to convert H₂S into

elemental sulphur, in solid palletized form Process, thus, makes the product environment friendly to customer's process

- Use of box flaring to prevent emission of light and heat to the surroundings.
- Oil recovery units (Hydro cyclones) to reduce oil content (ppm) in effluent prior to discharge.
- VOC recovery system

Leveraging environmental performance:

To enhance competitiveness, we would be looking forward to leveraging our environmental performance both at the National / International level.

A. B. Chakraborty

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GM-Head HSE

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