India’s Integrated Energy Policy 2006 cites that ‘the country faces formidable challenges in meeting its energy needs. India needs to sustain an 8-10% economic growth rate, over the next 25 years, if it is to eradicate poverty and meet its human development goals. To deliver a sustained growth rate and to meet the life line energy needs of all citizens, India needs, at the very least, to increase its primary energy supply by 3 to 4 times.’

In the backdrop of an absence of data, scientific assessment and mapping of the Base Level Manpower (BLMP) employed by the energy sector, we are faced with an additional acute challenge in trying to build a globally competitive industry.

As per the BP Energy Outlook, India’s energy production is set to increase by 112% for a consumption growth of 132% by 2035. Skilled manpower trained for a highly hazardous industry is critical in delivering this growth and achieving national goals. Safety then becomes a key ingredient in realizing this ambition.

BP India commissioned a formal assessment of the energy sector’s BLMP to establish a scientific baseline of source, quality, gaps and opportunities. This document prepared by NR Management Consultants Pvt. Ltd. (NRMC) highlights the findings of the study conducted on safety skills among the BLMP in the upstream activities of the O&G industry in India.

Recruitment

BLMP is recruited directly by Operating Companies (OCs) or through Contractors. Of the total BLMP engaged in upstream tasks, contractor based hiring comprises 80-90% with the balance 10-20% by OCs.

Criteria and qualifications:

- Minimum qualification for BLMP recruitment is National Trade Certificate (NTC) through the government’s Industrial Training Institutes (ITI).
- While the industry prefers recruiting candidates with 4-7 years of experience, public sector companies may also recruit NTC holders with no prior work experience.
- Those with no work experience, or ITI certificate, or any training finding opportunities to work for contractors as helpers in fabrication units.
- The study shows that ITI students or ITI diploma/certificate holders do not have sufficient industry-specific safety knowledge/skills. As a result the industry does not have safety skills as a selection criterion in recruitment of BLMP. There are only a few instances where safety skills of BLMP are assessed in terms of basic awareness on fire safety or first aid.

While the qualifications vary across different trades, the study found the following trends in recruitment:

- Required qualification for contractor recruitment of BLMP is trade specific.
- Some contractors have laid down eligibility and competency criteria for hiring workers for welding, or working as marine crew or for helping in anchoring.
- For jobs like rigging / scaffolding, NTC is not a criterion and instead such jobs require workers with a sturdy build (skilled or unskilled), who are taken on as assistants.

Distribution of BLMP in terms of training received:

- No formal training: 15%
- Formal training in technical institute: 85%
- Diploma Colleges: 15%
- ITI: 65%
- Other Institutes (such as for fire): 5%

Pre-recruitment Training Modes

Recruitment qualification:

- Junior Engineer/ Junior Superintendent
  - Diploma Level (3 year course in Electrical/Mechanical/Chemical) depending on past with 3 years’ experience in relevant sector.
  - Common qualifications: Diploma level/ certificate holders. Class X exam with science or NTC from ITI. Preference of 4-7 years of experience in related industry such as fertilizers/ Petrochemicals.

- Senior Technician
  - Common qualifications: Diploma Level (3 year course in Electrical/Mechanical/Chemical) depending on past with 3 years’ experience in relevant sector.
  - Technicians are also promoted to this level after 6-7 years of experience depending on performance.

- Junior Technician/Rigman/Assistant Grade I

- Assistant Junior Technician/Rigman/Assistant Grade II

- Junior Assistant Technician/ Junior Assistant
Information sources for jobs
- Nearly 45% of BLMP prefer to use networks and personal references as a source of information about potential jobs.
- Online job portals are said to be used by 50% of the BLMP for information in finding jobs; of which employment exchanges are the least preferred channels, with only about 5% of BLMP resorting to this channel.
- Less than 5% BLMP seek the route of hiring by manpower recruiters.

Patterns and modes of hiring
- Contractor hiring mix is more than 80% as project-based and only 20% as permanent employees.

Geographical distribution
- There is a pattern in terms of geography (place/region) from where BLMP is sourced.
- A preference of hiring from within the concerned state was seen in OCs generally. It was also found that private OCs and contractors prefer a mix of BLMP in their pool, sourced from both local and other regions.
- Public sector OCs are guided by government regulations, sourcing local workers from employment exchanges. For private sector OCs, contractors are the single largest source.
- Sub-contractors have trade specific geographic preferences. For instance, Bihar, UP and Kerala for welders, West Bengal for fitters, Punjab and Haryana for riggers.
- For tasks related to fire safety, there is a challenge to source manpower from local areas. Many contractors have started recruiting from local employment exchanges for onshore activity, particularly in fire safety.

Quality

Deployment pattern
- The general pattern of ratio between permanent OC BLMP and contractual BLMP deployed on any project is 1:4. However, the study found that some private OCs deploy 100% contractual BLMP and do not have any permanent cadre. BLMP deployment is at two levels - as per trades and tasks.

Trades:
1. Technical - welding, fitting, electrical works, rigging (mainly topside jobs), instrumentation and control, fabrication, scaffolding and repairing oil field equipment (roustabouts).
2. Non-technical - painting, fire-fighting, utility management, inspection services, first aid management services, hospitality/facility management services and catering.

Tasks
1. Commissioning of platforms, drilling rigs and onshore terminals - only contractual BLMP is engaged, no permanent BLMP of OC is engaged.
2. Regular maintenance on rigs, platforms and onshore terminals:
   - Public sector OCs deploy only permanent OC BLMP for all routine maintenance (offshore and onshore).
   - Private OCs deploy only contractual BLMP.
3. Repair and maintenance on rigs, platforms and onshore terminals during shut down - only contracted BLMP deployed.
Safety skills trainings

ITIs/Diploma colleges provide technical training and requisite qualifications to most BLMP.
- ITI curriculum has a 12 hour slot for the teaching of safety. The study found that in practicality this is limited to 2-4 hours at the start of the course. Only basic knowledge on Personal Protective Equipment, fire prevention and first aid is covered in this slot.
- Safety is addressed from the perspective of an individual trade and not any specific industry. Safety is mentioned briefly (in a lecture mode) at the start of some practical classes.
- Industry-ITI linkage is limited to 2 industrial visits (by some ITIs) during a 2 year course of Craftsmen Training Scheme.
- The instructors/faculty are also not abreast with the rapid changes in technology in the industry.
- The subject is accorded a 10-20% weightage in the ITI scoring pattern for all trade related subjects.
- Few private ITIs have adopted innovative pedagogic techniques using Google or YouTube videos to demonstrate safety skills and techniques to students.

- After obtaining the NTC at ITIs; the students go through an apprenticeship for 1-2 years, depending on the course, with a company from any industry.

Once in the industry the BLMP finds that in the safety induction imparted to everyone, irrespective of task/designation/level of employment, the training is task specific and is imparted only to the specific person/group of people deployed to carry-out a specific task more than once.

- At the ITI level, lectures on safety include aspects which pertain to the specific trade. Safety requirements may vary from industry to industry for a given trade. No safety parameters are discussed with respect to any specific industry. For example, a student of welding trade is taught about the importance of using eye protective gear while doing welding, but not about tagging of hazardous substances required during the welding procedure in the O&G industry.

Centre of Excellence

In the ITIs Centre of Excellence (CoE) scheme, multi-entry & multi-exit provision is allowed for the students. Trainees can opt to go to the labour market after completing Broad Based Basic Training of 1 year duration or after completing Advance Training of 1½ years duration. ITI students of particular trade(s) from the conventional system can seek admission for Advance Training.

Key benefits achieved from this scheme as per the ITI representatives are:
- Multiskilling courses of one year duration have been introduced, followed by advanced and specialized modules, which includes in-plant training in industries.
- It has resulted in improving infrastructure facilities like buildings, equipment etc.
- It is promoting adoption of new training technology with close involvement of industry and other stake holders in planning and implementation of training programmes.
- The Scheme has helped in empowering CoEs by providing sufficient autonomy in academic, administrative, financial and management dimensions.
- It has been a successful initiative to build partnerships with industries located in the vicinity/neighbourhood of ITIs through Institution Management Committee (IMC) to make training wholly demand driven.

Patterns and frameworks - post recruitment

Given that BLMP is untrained in safety skills, post recruitment training plays a critical role.

Contractor provided training:
- Safety trainings are obtained through on-job training and/or certifications from external certifying agencies as per job requirement.
- Regardless of the nature of the employment contract of BLMP, safety training varies from basic induction training to refresher trainings. There is also a system of weekly drills, safety briefing and tool box talks to discuss safety issues.
- Trainings provided by contractors and O&G companies are not certified by any external agency.
- Offshore jobs require further trainings like Basic Safety Training, Personal Survival Technique, Elementary First Aid etc.
- Some contractors have the BLMP pay for their own training in the first instance but support renewal of certification for long term employees.

- Challenges shared by BLMP include:
  - While the contractors sign up to undertake safety training of BLMP, they tend to push semi-skilled, unskilled existing manpower they have in their pool, compromising the quality of BLMP for onshore and offshore jobs.
  - For some trades, contractors maintain a readily available pool of 250-300 BLMP These BLMP are provided training at the time of deployment on their first assignment, but no repeat trainings are provided to them.
  - Sub-contractor deployed BLMP at backend sites do not receive any post recruitment training.
  - At times, contractors tag freshers to senior workers to learn how to use safety equipment for personal safety.
  - A few contractors do conduct refresher training on fire fighting for BLMP. These include:
    - Ability to discern the type of fire.
    - Recall among BLMP for use of appropriate extinguisher.
  - Few contractors have also developed training centres with simulators to train locally hired workers.
Other safety related activities

- Some OCs have a system of weekly fire drills as part of regular safety training for BLMP and other staff on the platforms. These help identify gaps in the response system and to take corrective measures.
- Some also provide Offshore Petroleum Industry Training Organization (OPITO) training to handle emergencies.
- Series of workshops with participation from senior management of OCs and contractors, is conducted specifically for contractual workers to improve the overall safety culture.
- Some OCs have established training institutes for the purpose of imparting quality safety training. However these are generally internal and not accredited by any external agency.

Gaps and opportunities

- Safety skills training in ITIs is limited to training handful of topics, lecture based and has no specific safety certification course to offer. More than half the BLMP respondents of this study expressed the need for improvement at ITI level for safety skills. A key feedback was improvement in the capacity of the trainers.
- Some more solutions suggested are:
  ▶ OCs can contribute by providing reference material and industry experts as guest faculty to apprise the faculty and students of changing trends.
  ▶ Addressing the curriculum gap based on industry needs and potential for enhanced employability.
  ▶ Leveraging the financial resources under the National Skill Development Mission to intensify safety skills training at the ITI level will help in building safety culture.
  ▶ Recruitment of BLMP needs to be informed by safety related competency criteria for each trade or task. The O&G industry would need to develop a common set of minimum safety criteria.
  ▶ Comprehensive Training Needs Assessment for each worker is not a general practice in the industry and should be introduced to enhance understanding of safety requirements.
  ▶ O&G companies in India should map the availability of ITIs within the catchment area/feeder area of the supply of BLMP for their respective onshore/offshore units. The agenda on safety skills training for the industry could be initiated through such identified ITIs.

About this document

The study attempts to present the patterns and frameworks of sourcing and recruitment of the BLMP followed by a description of current institutional arrangements for training and certification of BLMP on safety issues. It articulates emerging opportunities for the industry to contribute to strengthen safety-related skills of its BLMP.

The report is the synthesis of information obtained from management personnel, floor managers and base level manpower in government and private O&G companies; large and small contractors; O&G industry experts; ITIs; and other industry sources. While due care has been taken to ensure the accuracy of the information contained in the report no warranty, express or implied, is being made or will be made, by BP India or NR Management Consultants Pvt. Ltd. as regards the accuracy and adequacy of the information contained in the report. BP Exploration (Alpha) Limited (BPEAL) holds all copyrights to this report, and no part thereof may be reproduced or replicated without prior explicit and written permission of BPEAL.

Methodology

The study used qualitative techniques including Focused Group Discussions and in-depth interviews. Report is based on feedback and inputs of senior management of O&G companies, Departmental Heads and Floor Managers (human resource/personnel/operations), Workers Associations, Contractors and Sub-contractors providing specialised services for the O&G companies, faculty at ITIs/ITCs/other vocational training institutes and BLMP from selected trades, in Maharashtra and Andhra Pradesh.

About NRMC

NRMC is a development advisory firm providing technical management for inclusive, equitable and sustainable development. In most of its assignments, NRMC works with multiple stakeholders such as NGOs, national and state government agencies, research agencies, bilateral and multilateral agencies. NRMC’s approach is based on enabling stakeholders to identify, share and analyse information about skill development, livelihoods, resources and management strategies. In facilitating group processes that produce clear understandings about stakeholder roles and responsibilities, it helps to establish processes for effective monitoring of programmes and projects. For more information on NRMC: www.nrmcindia.co.in

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About BP India

With its many investments in India and employing over 8,500 people in the oil, gas, lubricants and petrochemicals businesses, BP has the largest presence among all international oil companies present in India. In addition to its gas alliance with Reliance Industries Ltd., BP’s activities include: Castrol lubricants; the licensing of competitive petrochemical technologies; IT and procurement back office activities; staffing and training for its global marine fleet; and the recruitment of skilled Indian employees for its global businesses.

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