

5.3 Conclusion

The conclusions from this study are that; the level of compliance with environmental health and safety procedures in the petroleum downstream sector are;

1. Moreover, it was identified that operators of FSS faces numerous challengers in their core to duty in implementing policies on the environmental health and safety as cost and inadequate commitment from the top management in ensuring compliance with environmental health and safety standards.
2. The finding also showed that non-compliance with environmental health and safety regulations are as a result of;
 - i. Lack of attention to details on the parts of employees and the employer
 - ii. Lack of clear policy on environmental health and safety
3. Finally, uncooperative attitudes and overcrowding at workplace is a difficult challenge creating hindrance to compliance with environmental health and safety regulations and standards.

5.4 Recommendations

In addressing the main objective of the study, the result from this study raises some implications to underscore its usefulness.

It also concluded per the finding that cost of implementing policies concerning environmental health and safety is a challenge and workers not given total attention to details contributes to non-compliance with environmental health and safety regulation at the workplace.

It also was seen that lack of clear policy, inadequate commitment from top management are also major factors that contribute to non-compliance with environmental health and safety standards. As Alli (2008) also documented high performance and hazard prevention are ensured when there is management leadership commitment and workers involvement through adequate training for both.

It is recommended that, for compliance with environmental health and safety regulation in the downstream sector to be observe by the OMCs; workers are to be taking through some workshop to help train and develop their attitude positively, operator are to take a critical look into top management commitment, cost of implementing polices and workers who are unable to pay attention to details by developing

a high level and lasting solution for a conducive environment with good health and safety

workplace.

References

- [1].Alli, B., O. (2008). Fundamental principles of occupational health and safety (2nd Ed.) International Labour Office – Geneva:ILO.
- [2].Ambisisi, A., Amezaga, J., Emeseh, E. (2014). Analysis of safety and environmental regulations for downstream petroleum industry operations in Nigeria: problem and prospects. *Environmental development*. 9, 43-60.
- [3].Ambisisi, A. (2016). A risk management framework for downstream petroleum product transportation and distribution in Nigeria. London, Coventry University.
<http://www.researchgate.net/publication/312498915>.
- [4]. Ambituuni, A., Amezaga, J., Emeseh, E. (2018). Optimising the integrity of safety critical petroleum assets: A project conceptualisation approach. *IEEE Transactions on Engineering Management*. DOI: 10.1109/TEM.2018:2839518.
- [5].Amponsah, R., Opei, F. K. (2014), Ghana's downstream petroleum sector: An assessment of key supply chain challenges and prospects for growth, *Int. Journal of Management and Business Studies*. ISSN 2167-03 Vol 7(3), pp. 441-48.
- [6].Ampofo, K. (2008). Ghanaweb. Retrieved from <http://ghanaweb.com/mobile/wap.small/news.article.php?ID=19014>.
- [7].AGI (2018): Petroleum and the environment: Transportation of oil, gas and refined products, part 15, *AAPG Foundation, 2018 American Geoscience institute*.
- [8].API Energy (2018). Transporting oil and natural gas.
- [9].Baker, S. (1990). Participative approach to safety management in the bauxite-alumina industry. *The Journal of Occupational Health and Safety in Australia and New Zealand*, 6(6), 469-480.
- [10]. Barclays (2015). Environmental and social risk briefing (oil and gas)

Version 6.0 March 2015 Barclays
Bank PLC

- [11]. Boateng, J. K., Buahing, A. A. (2014). Assessing educational needs of workers on effective health, safety, environment and quality (HSEQ) management system in Ghana's oil retail industry. *European Journal of Business and Management, Vol. No. 20, ISSN 2222- 1905.*
- [12]. Charles, C., (1999). The petroleum industry: A nontechnical guide, Tulsa: Penn well, constitution of the federal republic of Nigeria, 1999 (hereafter CFRN). Section 20, 12, 33 and 34.
- [13]. DIR (1997). Diesel transport, storage and refueling underground. guidelines, Documents No. ZMA565BN.
- [14]. Dordi, H. (2009). Health, safety and environment culture in the petroleum industry in Norway. Dissertation for the degree philosophiae doctor (PhD) University of Bergen, Norway.
- [15]. Ebigo, P. O. (2008). Appraising the impact of economic reform programme on micro, small and a. medium scales enterprises. A paper delivered at the 19th Enugu international trade fair colloquium. Enugu, Nigeria.
- [16]. Freeman, R.E. (1984). Strategic management, a stakeholder approach. Boston: Harper Collins.
- [17]. Ghana Exploration and Production Forum (2013). Retrieved from:
a. <http://gh-epf.org/index.php/about-the-industry>.
- [18]. Hanlon, B. & Larget, B (2011). Samples and populations. Department of Statistics, University of Wisconsin – Madison September 8, 2011.
- [19]. HSE (Health and Safety Executive) (2000). Successful health and safety management, HMSO, London.
- [20]. HSS (2016). Safety Note 71: transportation, storage and use of petroleum. University of Reading 2016, Edition1, March 2016.
- [21]. Huang, L. J & Liang, D. (2013). Development of safety regulation and management system in energy industry of China: comparative and case study perspective. *Procedia Engineering, 52(0), pp.165 – 170.*

- [22]. ILO (2003). Safety in numbers: pointers for a global safety culture at work. Geneva, Switzerland.
- [23]. ILO (2013). Safe work. Global estimates of fatal work related diseases and occupational accidents, World Bank Regions.
- [24]. Jilcha, K., Kitaw, D. (2016). A literature review on global occupational safety and health practice & accidents severity. *International Journal for Quality Research* 10(2) 279-310 DOI- 10.1821/IJQR 10.02-04. ISSN 1800-6450.
- [25]. Kahn, W. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal* 33(4), 692 – 724.
- [26]. Kamau, O., & Sma, M. (2016). A critical review of literature on employee engagement concept, *IJRSS*, Vol 6 No: 3 ISSN 2307 – 227X.
- [27]. Kanyi, J. (2014). Factors affecting environmental best practices compliance among retail fuel service stations in Thika East Sub – Country Kenya. University of Nairobi. Thesis
- [28]. Kelloway, E. & Day, A. (2005). Building healthy workplaces: What we know so far. *Canadian Journal of Behavioural Sciences* (37) 223-235.
- [29]. Karr, A. (2000). They're falling. *Safety and Health*; 161(1), 30 – 35
- [30]. Lewin, G. (2003). Managing the downstream oil supply chain: A customer-led strategy. *World Energy*, vol: 22-25.
- [31]. Maslach, C., Leitei, M., P. & Scheufeh, W., B. (2001). Job bournout. *Annual Review of Psychology*, 52(1), 397 – 422.
- [32]. Mishra, S. & Sahoo, C., K. (2012). A framework towards employee. The PSU Experience [Article]. *ASCI Journal of Management*, 42(1) 94 – 122.
- [33]. MOWLAP (2002). A field guide to fuel handling, transportation and storage (3rd Ed. Feb, 2002). British Columbia.
- [34]. National Petroleum Authority Act (2005). Retrieved from Parliament of Ghana: <http://www.parliament.gh/assets/file/Acts/ACT%20691%20National%20Petroleum%20Authority.pdf>.
- [35]. Niven, K. & Mcleod, R (2009). Offshore industry; management of health hazards in the upstream petroleum industry. Oxford, *Oxford University*

- Press.* *Journals.*
permissions@oxfordjournal.org
- [36]. NPA (2017). 21 fuel stations shutdown for failing to meet regulatory standards-NPA, Sat, 14th Oct, 2017, General News.
- [37]. Ogbo, A. (2009). Occupational safety and management adherence for sustainable development in Nigeria. *Journal of Nigerian Institute of Management*, 44, 14-19.
- [38]. Ologbo, C. A. & Saundah, S. (2011). Engaging people who drive execution and organizational performance. *American Journal of Economic and Business Administration*. 3(3) 569 – 575.
- [39]. Oluwagbemi B., F. (2011). Themes and issues in occupational health and safety, 2nd edition, vertex media limited, Ibadan, Nigeria pp 19. Ontario Ministry of Labour.
<https://www.labour.gov.on.ca/english/hs/faqs/hazards.php>.
- [40]. Omar, A., A., H. (2016). Employee engagement: A review of the recent empirical literature, University of Khartoum, Sudan, *IJARIE – ISSN (0) – 2395 – 4396, Vol – 2 Issue 6*.
- [41]. Parker, D. L, Carl, W. R., French, L. R., & Martin, F. B. (1994). Characteristics of adolescent work injuries reported to the Minnesota department of labor and industry, *American Journal of Public Health*, 84(4), 606 - 611
- [42]. Petroleum Regulations (2017). Exploration and production (Health, Safety and Environment). L.I. 2258. Ghana Publishing Company, Assembly Press, Accra.
- [43]. Petroleum Industry, Wikipedia. (2013). Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Petroleum_industry.
- [44]. Principle II Rio de Janeiro, (1992). Report of the United Nations Conference on Environment and Development. Rio Declaration on Environment and Development. 3-14 June 1992.
- [45]. Quartey, S.H. & Pupilampu, B., B. (2012). Employee health and safety practices: an exploratory and comparative study of the shipping and manufacturing industries in Ghana. *International Journal of Business and Management*, 7(81).
<http://dx.doi.org/10.5539/ijbm.v7n23p81>.

- [46]. Rowe, H. (2001). Best practice in health and safety through staff involvement. *Conference Papers Safety in Action 2001*. Melbourne: Safety Institute of Australia.
- [47]. STI Group (2018). Pipeline, ship and rail: The benefits and needs of difficult oil and gas transport methods, 3127, Taxes Ave/Bridge City.
- [48]. Tullow Oil Ghana (2013). Tullow Oil Ghana. Retrieved <http://www.tulloil.com/ghana/index.asp> (2013, October)..
- [49]. WHO (2010). Raising awareness of stress at work in developing countries protecting workers' health series 6; Geneva, Switzerland. WHO Press
- [50]. WHO (2010). WHO healthy workplace, framework and model, background and supporting literature and practices. Retrieved from <http://www.who.int/occupationalhealth/healthy.workplace/en/index.html>
- [51]. Yirenkyi, G. (2016). Occupational health and safety audit of fuel filling stations in the Agona Nkwanta Inhaban and Secondi – Takoradi Metropolis in Ghana, A thesis presented to knust, Kumasi, Ghana. Thesis
- [52]. Zafar, A. (2014). Health and safety in oil and gas sector, Bureau Varistas, Pakistan.