Assessment of Technologically Enhanced Pollutants Concentration in Egyptian Natural Gas

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Chapter -1

General Introduction and Literature Review

Naturally Occurring Radioactive Materials, NORMs are found almost everywhere. They exist in air, in soil, and even as radioactive potassium in the human body's as well as in public water supplies and some food such as nuts, peanut butter and cereal. In addition they are found in fossil fuel such as coal, oil and natural gas. It is worth to mention that the potential radiation risk that can result from the presence of NORM in all the previously mentioned forces are very low and are usually neglected. However, the use of raw material for manufacturing different sorts of chemical products such as oil, coal and natural gas could result in concentrating NORMs in the product, since the objective of the studies performed in this thesis is concerned with the effect of NORMs in oil and natural gas on people engaged in industries related to three or two fossil fuels, the studies and discussions will be confused to merely to these sources[1,2].

In general, fossil fuels are considered as very weak sources of NORM, and therefore less or no attention are given to radiation exposure that may result from them. However, the use of any one of them during manufacturing chemical products can lead to enhance the concentration of NORMs in the products or in the waste materials. In addition, the workers engaged in these industries have to be under control and kept to minimum level. Further, the concentration of NORMs like Radium – 226 and Radium – 228 may also occur in sludge that accumulates in oil field, pits and tanks. These sludge become sources of oil and gas NORM wastes.