

PENGURUSAN SISA NUKLEAR DI MALAYSIA: SATU KAJIAN PERUNDANGAN

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Abstrak

Penyelidikan ini merupakan satu kajian sosio-perundangan mengenai pengurusan sisa nuklear di Malaysia. Kajian yang dilakukan ini sangat penting dan berguna kerana sudah terdapat permasalahan berkaitan sisa radioaktif di Malaysia. Tesis ini juga penting bagi menjangkau permasalahan berkaitan sisa nuklear apabila negara membangunkan reaktor nuklear pada masa hadapan. Sehubungan itu, penyelidikan ini dilakukan untuk mencapai beberapa objektif utama. Pertamanya, penyelidikan ini akan meneliti konsep pengurusan sisa nuklear, kerangka teori, prinsip perundangan berkaitan pengurusan sisa nuklear peringkat antarabangsa. Keduanya, mengenal pasti perundangan, institusi dan kawal selia yang terdapat di Malaysia berkaitan pengurusan sisa nuklear. Ketiganya, meneliti permasalahan pengurusan sisa nuklear di Malaysia. Objektif terakhir adalah mencadangkan penambahbaikan pengurusan sisa nuklear di Malaysia. Pada hakikatnya, terdapat kelemahan perundangan dalam amalan pengurusan sisa nuklear di Malaysia. Kelemahan tadbir urus, kaedah penyimpanan sementara, pelupusan sisa nuklear adalah beberapa isu yang perlu diselidiki. Selain itu masalah pampasan dan liabiliti serta konsultasi dan penyertaan masyarakat yang diutarakan juga jelas menunjukkan isu amat membimbangkan dan perlu ditangani kerajaan. Kajian lapangan dengan kerjasama Lembaga Perlesenan Tenaga Atom Malaysia (LPTA) telah dibuat ke atas dua lokasi yang mempunyai isu pengurusan sisa radioaktif iaitu sel penyimpanan jangka panjang, sisa radioaktif, kilang Asia Rare Earth, Perak (ARE) dan pusat simpanan sementara sisa radioaktif, kilang Lynas Sdn Bhd, Pahang (LYNAS). Dari kajian lapangan yang dibuat, didapati terdapat beberapa kelemahan dari segi perundangan yang mungkin boleh ditambah baik dengan peraturan dan amalan terbaik antarabangsa. Segala aspek cadangan telah ditulis pada bab tujuh untuk menyediakan syor penambahbaikan secara perundangan dan institusi sejajar dengan pembangunan nuklear pada masa hadapan. Cadangan pindaan perundangan domestik seperti transformasi perundangan khas sisa nuklear, mensyaratkan konsultasi masyarakat dalam perundangan, memperincikan perundangan berkaitan aktiviti kitar semula dan guna semula serta mengemukakan secara perundangan inisiatif dan ganjaran kepada komuniti tempatan. Cadangan penambahbaikan melalui institusi pula termasuklah memantapkan hala tuju dan menginsitituisikan suruhanjaya pengurusan sisa nuklear Malaysia, penubuhan direktorat pengurusan sisa nuklear dan kerjasama serantau, serta pembangunan kepakaran. Adalah diharapkan kajian ini dapat menjadi pencetus kepada kajian-kajian perundangan yang lebih mendalam berkaitan pembangunan tenaga nuklear di Malaysia.

NUCLEAR WASTE MANAGEMENT IN MALAYSIA: A LEGAL STUDY

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Abstract

This is a socio-legal research on nuclear waste management in Malaysia. The research is relevant to tackle the current issues related to the domestic radioactive waste management. This thesis is also important to identify problems related to the nuclear waste when the country develops nuclear reactors in the future. Hence, this research was carried out to achieve several key objectives. Firstly, this research will examine the concept of nuclear waste management, the theoretical framework and legal principles applied internationally. Secondly, to identify the legal, institutional and regulatory framework in Malaysia related to the management of nuclear waste. Thirdly, to examine the problem of nuclear waste management in Malaysia. The final objective is to recommend improvements from legal perspective relating to the nuclear waste management in Malaysia. One of the findings of the thesis shows that there are weaknesses in the management of nuclear waste in Malaysia. Issues of the governance of nuclear waste management, unclear policy of temporary storage and issue on the nuclear waste disposal are some problems that require further examination. In addition, there are further issues on the liability, consultations and community participation which need to be addressed by the government. The field study was conducted in relation to issues on the radioactive waste management. This was conducted at two site locations, namely the radioactive waste disposal cell, Asian Rare Earth, in Perak (ARE) and the temporary radioactive waste storage plant, Lynas Sdn Bhd in Pahang (LYNAS). Among the outcomes of the field study are as follows: namely there are domestic legal loopholes that could be improved within the international standards and practices. Recommendations and suggestions have been proposed in chapter seven while proposals are also made for legislative and institutional improvements in line with the nuclear development in the future. Among the proposed recommendations include amendments to domestic legislation such as legal transformation of nuclear waste, insertion of community consultation in the legislation, codification of the recycling and reuse of nuclear waste and initiate reward and financial assistance to local communities. The suggestion also includes improvements through institutional such as strengthening policy of nuclear waste, establishment of nuclear waste commission of Malaysia, establishment of the directorate of nuclear waste management, regional cooperation and development of human expertise. It is a hope that this research will become an impetus for further legal research related to the development of nuclear energy in Malaysia.