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## Graded Approach in Future Authorization of NORM Industry in Indonesia

Graded Approach in Future Authorization of NORM Industry in Indonesia

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NORM in Indonesia has been an object of authorization since almost two decades. It is important to be authorized considering its radiation potential particularly on internal radiation. NORM in Indonesia is mostly resulted from mining industry. One that most considered is NORM from tin mining. Those mining are operated in Riau Island Province, and Bangka Belitung Province. Lately, as the increasing demand of zircon from other countries, there are new industries processing zircon in Kalimantan Island and Bangka Belitung. Furthermore, there is also national interest to develop rare earth elements (REE) and Uranium/Thorium processed from NORM of tin mining. Those are considered as new challenges in authorization of NORM in Indonesia. On the regulation, Indonesia actually has issued some regulation to authorize NORM. There are Government Regulation No. 33 of 2007 on the Safety of Ionizing Radiation and Security of Radioactive Sources and Government Regulation No. 29 of 2008 on the Licensing of Ionizing Radiation Sources and Nuclear Materials. More detailed regulations are found in Bapeten Chairman Regulation No. 9 of 2009 on the Intervention of TENORM and Bapeten Chairman Regulation No. 16 of 2013 on the Radiation Safety of TENORM Storage. With increasing NORM related industries, revision of those regulations is necessary. Furthermore, new regulation with graded approach needs to be implemented. At this moment, Bapeten is in the process of issuing new Government Regulation on the Licensing of Radioactive Material Mining. It will regulate Uranium/Thorium mining including NORM industries not only through the storage license but also through the processing license. The requirements to obtain processing license is more robust than those of storage license. It is expected that new regulation will improve the safety of worker and public as well as the protection of environment from hazardous radiation resulted from NORM.

Key Words: NORM, regulation, graded approach, license.

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