

SKRIPSI

**PEMBUANGAN AIR LIMBAH OLAHAN INSTALASI NUKLIR KE LAUT
(Studi Pendekatan Hukum Internasional Terhadap Kebijakan Jepang Pasca
Kecelakaan Nuklir Fukushima 2011)**

Diajukan Sebagai Salah Satu Syarat Untuk Memperoleh Gelar Sarjana Hukum

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2025

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**PEMBUANGAN AIR LIMBAH OLAHAN INSTALASI NUKLIR KE LAUT
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(Imelia Ermanda, 2010111047, Fakultas Hukum Universitas Andalas, 135 Halaman, 2025)

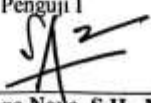
ABSTRAK

Pemanfaatan energi nuklir yang awalnya difokuskan untuk kepentingan militer telah berkembang menjadi sumber energi alternatif melalui Pembangkit Listrik Tenaga Nuklir (PLTN). Perkembangan ini menimbulkan tantangan baru dalam pengelolaan limbah radioaktif, termasuk isu global terkait pembuangan air limbah olahan dari PLTN Fukushima Daiichi ke laut pasca bencana tsunami 2011. Penelitian ini merumuskan dua permasalahan utama. Pertama, bagaimana pengaturan hukum internasional mengatur pembuangan air limbah olahan instalasi nuklir ke laut. Kedua, bagaimanakah kebijakan Jepang dalam membuang air limbah olahan instalasi nuklir ke laut pasca kecelakaan di Fukushima Daiichi ditinjau dari hukum internasional. Penelitian ini menggunakan pendekatan normatif yuridis dengan metode eksploratif untuk mengkaji aspek hukum aktivitas pembuangan limbah ke laut sebagaimana yang diatur dalam Pasal 192, 194, 207 dan 210 *United Nation Convention on the Law of the Sea* 1982 (UNCLOS), Pasal 4 *London Dumping Convention* beserta *Protocol*, prinsip-prinsip hukum lingkungan internasional seperti *no harm, prevention*, dan *precautionary principle*, serta *instrument soft law* seperti *Safety Standards Series No. GSR Part 3* dan *General Safety Requirements* dari *International Atomic Energy Agency* (IAEA). Hasil penelitian menunjukkan bahwa meskipun kebijakan Jepang telah memenuhi standar teknis dan secara formal mengikuti ketentuan hukum internasional, masih terdapat persoalan normatif terkait transparansi, partisipasi publik, dan penerapan prinsip kehati-hatian secara substansial. Selain itu keterbatasan UNCLOS, Konvensi London dan Protokol dalam menyediakan mekanisme pengawasan, penegakan hukum, dan batasan dosis nuklida tertentu seperti *tritium* menunjukkan perlunya penguatan kerangka hukum internasional untuk menghadapi risiko lingkungan laut di masa depan. Penelitian ini menunjukkan pentingnya pendekatan dalam menilai legalitas tindakan negara dalam konteks aktivitas berisiko tinggi yang melibatkan ketidakpastian ilmiah. Hasil penelitian ini dapat menjadi kontribusi untuk perumusan kebijakan internasional yang lebih responsif terhadap potensi risiko lingkungan laut dari limbah berkadar radioaktif.

Kata Kunci: Fukushima Daiichi, Air Limbah Olahan Instalasi Nuklir, Pembuangan Limbah, Hukum Laut

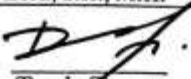
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DISPOSAL OF NUCLEAR WASTE TREATED WATER INTO THE SEA
(Study of the International Legal Approach to Japan's Policy Following the 2011 Fukushima Nuclear Accident)

(Imelia Ermanda, 2010111047, Faculty of Law, Andalas University, 135 Pages, 2025)

ABSTRACT

The use of nuclear energy, which was initially focused on military purposes, has developed into an alternative energy source through nuclear power plants (NPPs). This development has created new challenges in the management of radioactive waste, including global issues related to the discharge of treated wastewater from the Fukushima Daiichi NPP into the sea after the 2011 tsunami. This study formulates two main issues. First, how does international law regulate the discharge of treated wastewater from nuclear installations into the sea? Second, how does international law view Japan's policy of discharging treated wastewater from nuclear installations into the sea after the accident at Fukushima Daiichi? This study uses a normative juridical approach with exploratory methods to examine the legal aspects of waste disposal into the sea as regulated in Articles 192, 194, 207, and 210 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), Article 4 of the London Dumping Convention and its Protocol, principles of international environmental law such as no harm, prevention, and the precautionary principle, as well as soft law instruments such as Safety Standards Series No. GSR Part 3 and General Safety Requirements from the International Atomic Energy Agency (IAEA). The results of the study show that although Japan's policy has met technical standards and formally complies with international legal provisions, there are still normative issues related to transparency and participation. In addition, the limitations of UNCLOS, the London Convention, and the Protocol in providing mechanisms for monitoring, law enforcement, and restrictions on certain nuclide doses such as tritium demonstrate the need to strengthen the international legal framework to address future marine environmental risks. This study highlights the importance of an approach that assesses the legality of state actions in the context of high-risk activities involving scientific uncertainty. The results of this study can contribute to the formulation of international policies that are more responsive to the potential marine environmental risks of radioactive waste.

Keywords: Fukushima Daiichi, Nuclear Waste Treated Water, Disposal, Law of the Sea.

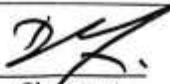
This minor thesis has been successfully defended and regarded to graduate by September 3rd, 2025.

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