



Rajya Sabha passes SHANTI Bill 2025, after it was passed by Lok Sabha

Government Retains Full Control Over Strategic Materials, Spent Fuel, and Nuclear Safety Remains Non-Negotiable Under SHANTI Bill: Dr Jitendra Singh

From Hospitals to Farms to Cancer Care: Nuclear Science Driving India's Everyday Life, Says Dr Jitendra Singh

PM Modi's Vision Unlocks Nuclear Energy Reforms While Safeguarding Safety, Sovereignty and Public Interest: Dr Jitendra Singh

Radiation at Indian Nuclear Plants Well Below Global Limits; No Cancer Risk, Dr. Jitendra Singh at Rajya Sabha

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Following the passage of The Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Bill, 2025 by the Lok Sabha, Union Minister of State (Independent Charge) for Science & Technology, Earth Sciences, and Minister of State in the PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh today participated in an extensive discussion on the Bill in the Rajya Sabha, clarifying key provisions, addressing concerns raised by Members, and firmly underlining that nuclear safety, national sovereignty and public accountability remain non-negotiable.

Dr Jitendra Singh explained that the Bill consolidates and rationalises provisions from the Atomic Energy Act, 1962, the Civil Liability for Nuclear Damage (CLND) Act, and now accords statutory status to the Atomic Energy Regulatory Board, making it part of the parent legislation. This, he said, strengthens regulatory oversight rather than diluting it, and reflects India's commitment to global best practices in nuclear governance.

Highlighting the changing global and technological context, Dr Jitendra Singh said that objections raised to nuclear reforms in 2010 must be viewed in the light of today's realities, where technology, safety systems and global energy demands have transformed dramatically. Concepts such as Small Modular Reactors and Bharat Small Reactors, he noted, were unimaginable fifteen years ago, but are now emerging as safe, efficient, and flexible solutions for clean, 24×7 power generation.

Addressing safety concerns, the Minister categorically stated that nuclear safety standards remain unchanged and uncompromised, governed by the same stringent principles enshrined in the Atomic Energy Act of 1962- “safety first, production next.” He detailed the rigorous inspection regime, including quarterly inspections during construction, biannual inspections during operation, five-yearly licence renewals, enhanced powers to the now-statutory Atomic Energy Regulatory Board, and oversight aligned with International Atomic Energy Agency parameters. He further reassured the House that India’s nuclear plants are geographically located far from seismic fault zones and that radiation levels at Indian reactors are many times below prescribed global safety limits.

Dr Jitendra Singh also addressed public health apprehensions, stating that there is no scientific evidence of carcinogenic impact from Indian nuclear reactors. He cited radiation emission data in micro-sieverts, demonstrating that levels at facilities such as Kudankulam, Kalpakkam, Rawatbhata and Tarapur are far below permissible limits. He added that India has significantly upgraded cyber security safeguards in the nuclear sector, including encryption, secure coding, regular audits, malware filtering, and multi-layered digital protection, reflecting new-age threat preparedness.

Clarifying misconceptions about privatisation, the Minister stated that while exploration activities may involve private partners under defined conditions, uranium mining beyond specified thresholds will remain exclusively with the government. Similarly, spent fuel management will always remain under government custody, following a clearly defined, long-term storage and handling protocol. Strategic materials such as source material, fissile material and heavy water will continue to be under strict government control.

On liability and compensation, Dr Jitendra Singh explained that the Bill introduces graded liability caps to encourage participation by smaller investors without diluting victim compensation. He assured that in the event of damage exceeding operator liability limits, full compensation mechanisms are provided through government-backed funds and international conventions, ensuring that affected parties are not left unprotected. The definition of “nuclear damage” has also been expanded to explicitly include environmental damage.

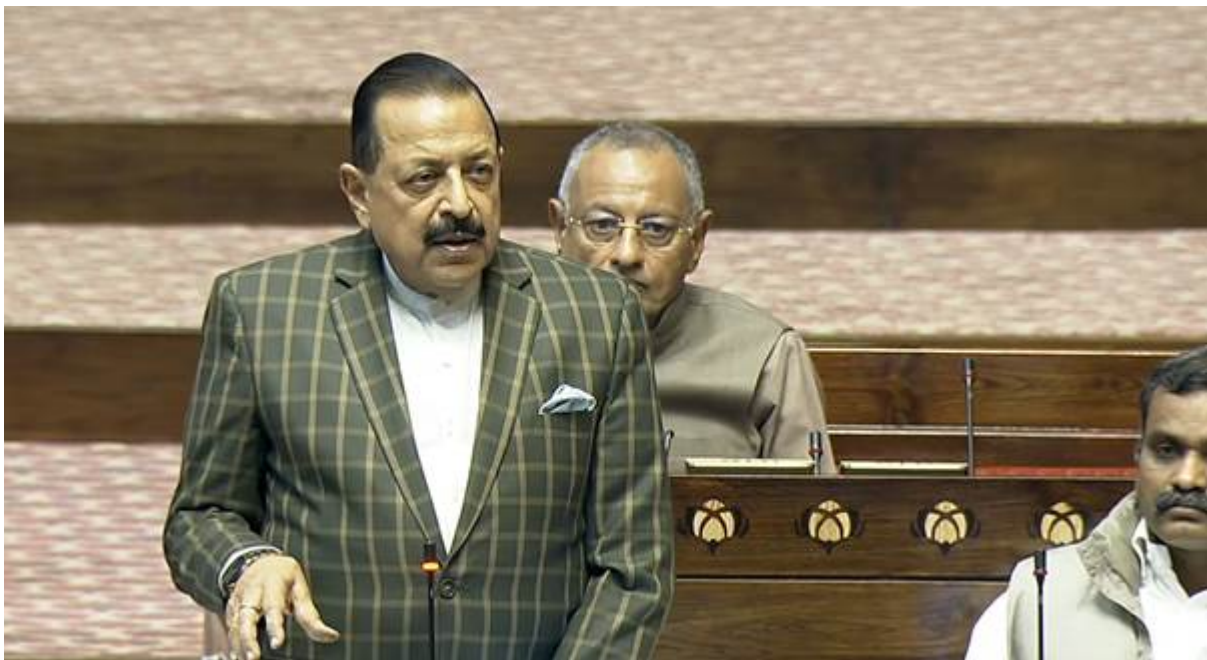
The Minister highlighted the introduction of the Atomic Energy Redressal Commission, stating that it is meant to provide an additional, faster dispute-resolution mechanism for citizens, without restricting access to civil courts or higher judiciary. He rejected claims that the Bill places nuclear matters outside judicial scrutiny.

Responding to concerns on sovereignty and foreign influence, Dr Jitendra Singh asserted that India will adopt only those international best practices that suit Indian conditions, without compromising strategic autonomy or traditional strengths. He reiterated that the SHANTI Bill pertains strictly to civilian nuclear energy, with uranium enrichment levels limited to reactor requirements and completely unrelated to weapons-grade activities.

Dr Jitendra Singh also drew attention to the expanding role of nuclear science in healthcare, agriculture, food preservation, and cancer treatment, citing advances in nuclear medicine for childhood leukaemia and prostate cancer through institutions such as Tata Memorial Centre. He said liberalising research participation would accelerate innovation across these sectors.

Outlining India’s long-term nuclear energy roadmap, the Minister stated that the country has already achieved nearly 9 GW of nuclear capacity, with targets of 22 GW by 2032, 47 GW by 2037, 67 GW by 2042 and 100 GW by 2047, contributing nearly 10% of India’s total energy needs. He emphasised that nuclear power will be indispensable in meeting future energy demands driven by artificial intelligence and digital infrastructure, as it provides reliable, round-the-clock clean energy unlike intermittent sources.

Concluding his address, Dr Jitendra Singh said the SHANTI Bill reflects India's confidence, scientific maturity, and readiness to lead responsibly in the global clean energy transition. He assured Members that the Government remains open to constructive inputs and will continue engaging stakeholders during rule-making, reaffirming that India's nuclear journey will be guided by safety, transparency, and national interest.



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