RECIPE FOR A DISASTER

(ANALYSIS OF THE SUSTAINABLE HARNESSING AND ADVANCEMENT OF NUCLEAR ENERGY FOR TRANSFORMING INDIA - SHANTI ACT 2025)

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1.0 Purpose and objectives

The purpose and objectives of the, inappropriately titled, SHANTI Act are:

1. To repeal the Atomic Energy Act, 1962 and the Civil Liability for Nuclear Damage Act, 2010, and to replace them with a single, comprehensive law aligned with India's present and future energy requirements.
2. To enable entry into the Nuclear Power Industry of Indian and Foreign Private players into erection and operation of Nuclear Power Stations with limited liability. Particularly to induct the Adani and Tata Groups into the nuclear sector, which till now has been the exclusive preserve of the Govt, owned. Nuclear Power Corporation of India (NPCIL).
3. To enable Small Modular Reactors (SMRs) and Bharat Small Reactors (BSRs).

2.0 The SHANTI bill enacted by the Parliament without adequate scrutiny

The SHANTI Act seeks to repeal the Atomic Energy Act, 1962 and the Civil Liability for Nuclear Damage Act, 2010, and to replace them with a single comprehensive law. Such a serious and critical legislation was not referred to a select committee for detailed scrutiny. Instead, it was passed under protest and walk out by the opposition.

3.0 Endangering not only lives but enforcing untold misery even on future generations

The seriousness and criticality of such a legislation could be gauged from a simple fact that the meltdown of a rector of 1000 MW would kill millions and enforce evacuation within 30 to 100 km bringing a halt to all economic activity. Radioactive fallout would render agriculture, annual husbandry and fisheries impossible for years within the affected area.

Overall India has a poor track record of safety in almost every sector. A case that need to the examined in the context of SHANTI Act is the Bhopal Gas Tragedy. On December 3 1984, more than 40 tons of methyl isocyanate gas leaked from a pesticide plant in Bhopal, immediately killing at least 3,800 people and causing significant morbidity and premature death for many thousands more. Union Carbide Corporation (UCC) - the company involved in what became the worst industrial accident in history immediately tried to dissociate itself from legal responsibility. Eventually, it reached a settlement with the Indian Government through mediation of the Supreme Court and accepted moral responsibility. It paid $470 million in compensation, a relatively small amount of based on significant underestimations of the long-term health consequences of exposure and the number of people exposed.

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As on date, over hundred and fifty thousand patients visit the hospital on a regular basis. Three hundred and thirty seven tonnes toxic waste from the factory premises has been buried on a village near Indore. The long term consequences of this burial is an open question.

The SHANTI Act 2025, caps the operator liability at a paltry ₹100 crore to ₹3,000 crore (approximately $332 million at the upper end). This in itself indicates that nothing has been learnt from the Bhopal Gas tragedy. Not only is the liability amount completely inadequate but is not even in keeping with the safeguards of the Civil Liability for Nuclear Damage Act (CLNDA) 2010.

Chernobyl's estimated impact was around $700 billion (inflation-adjusted). Fukushima's is estimated to have caused a loss of $187 billion to Japan's GDP besides nearly $200 billion in clean-up costs. Both these actual liabilities vastly exceed the liability caps proposed under SHANTI Act 2025.

Neither can India forget the ENRON saga that left the nation with a huge liability that has to be nursed by a public sector organisation. Both Bhopal and Enron clearly establish that by weakening liability, the Act exposes Indian citizens and taxpayers to catastrophic financial burdens while insulating corporate operators in the case of a serious nuclear accident.

The most serious lacuna in the Act is that there are no Indian standards to which foreign players have to adhere to.

Over the last 60 years, DAE/ NPCIL have built 8,780 MW. There have been no major incidents or accidents. Why then is the Public sector being wilfully undermined?

4.0 Lack of /or poor liability standards

Even if the suppliers faulty equipment causes a nuclear accident, the liability will be solely with the nuclear plant's owner. And even this liability will be capped at 300 million SDRs (Special Drawing Rights), equivalent to $ 420 million at the current value of the dollar. Thus, a low liability regime that is prevalent in the US nuclear industry has been introduced in India, even though other suppliers the Russians and the French were willing to supply nuclear plants and equipment to India without linking it to change in India's liability laws.

5.0 Privatising the fuel cycle as well

The Act permits the private and foreign sectors into uranium mining, fuel fabrication, reactor operation, and reprocessing. India's nuclear fuel cycle is intrinsically linked to its strategic capabilities and was governed under the Atomic Energy Act, 1962 to ensure sovereign oversight.

6.0 Inducting untried and untested SMR and BSRs

The SHANTI Act permits Small Modular Reactors (SMRs) and Bharat Small Reactors (BSRs). These units are factory-built, designed for decentralized use in industrial hubs or to replace ageing coal plants. A proliferation of such decentralised units is fraught with serious risks in a highly populated country.

None of the US suppliers has yet supplied and commissioned an SMR anywhere in the world. There are only two existing SMRs; one is a floating SMR built in Pevek, Russia's Far East, specifically to support supplying electricity to a remote area. The other is a 210 MW demonstration project at Shidaowan Bay, in Shandong province, China. A third is being built in Argentina, CAREM SMR, which is again facing serious cost and time overruns for its 25 MW pilot project. While the first has a clear geographical requirement for an SMR, the Chinese and Argentinian projects appeared to be experiments in scaling down nuclear reactors. As of now, the results are not particularly positive[2].

7.0 Must Run Stations

As with renewable energy, the private nuclear plants will also have the status of must run stations. This implies that even if there are cheaper sources of power available, power produced from these must run station has to be purchased.[3]

8.0 Conclusion - Educate, Agitate, Organise

That was the slogan given by Dr. B.R. Ambedkar. If there is one issue on which the people of India, (particularly the power engineers and employees, farmers, Industrial workers) should put into practice the words of Dr. Ambedkar and save the nation form an impending disaster this is the issue.

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2. The data has been taken from - Inviting Nuclear and Economic Disasters in the name of Shanti a Press Release dated 20.12.25 issued by Soumya Dutta, Priya Dharshini, Prashant Bhushan, Kavita Srivastava

[3] The key Characteristics of a must run station are: **Priority Dispatch:** They are dispatched first, regardless of cost, to maintain grid balance. **Protection from Curtailment:** Cannot be shut down due to surplus power or commercial factors, only for grid security/technical constraints. **Must Run** The Electricity Rules 2021 (Promotion of Generation of Electricity from Must Run Power Plants) mandates this status for both RE projects and Nuclear Power plants.