

INDIA'S NUCLEAR LICENSING AND SAFETY AUTHORISATION FRAMEWORK

Draft SHANTI Rules and Regulations, 2026

On 14 August 2026, the Department of Atomic Energy released, for public comment, the draft Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India Rules, 2026, framed under Section 84 and other enabling provisions of the SHANTI Act, 2025 (Act No. 39 of 2025). On the same day, the Atomic Energy Regulatory Board (the Board) released, for public comment, the corresponding draft SHANTI Regulations, 2026, issued under Section 85 and other enabling provisions of the Act. The two instruments answer distinct and sequential questions. The Rules govern who may hold a nuclear licence and on what terms; the Regulations govern the question of the safety authorisation process by which the Board permits a licensee to actually site, construct, commission, operate and eventually decommission a facility. A licence under the Rules does not by itself authorise construction or operation; a separate safety authorisation from the Board is required at each stage. This update reads the two instruments together and summarises the combined licensing and safety authorisation architecture, its implications for private participation in the sector, and how it paves the way for the effective implementation of the SHANTI Act. Comments on both drafts are due to the Department of Atomic Energy by 4 September 2026.

The Licensing Architecture

Rule 3 of the Rules places nuclear power plants and reactors under a single composite licence covering building, ownership, operation and decommissioning; no licence may be applied for or granted separately for any of these stages. The permitted uses extend beyond grid supply of electricity, and also include captive power generation, processing heat and hydrogen production, isotope production, and education, training and research applications. The explanation to rule 3 is notably specific in naming captive nuclear power as available for hard to abate industrial sectors such as aluminium and cement, and separately for data centres, high performance computing, semiconductor fabrication and artificial intelligence enabled technologies, an express commercial hook for industrial and technology clients considering captive supply.

Parallel licensing tracks exist for nuclear fuel fabrication (rules 10 to 12), mining of uranium and thorium (rules 13 to 16, restricted under rule 14(1) to Government or a Government owned or controlled company for primary ore), milling and ore processing (rules 17 to 19), manufacture of radiation sources (rules 20 to 23), and import, export, acquisition and transportation of nuclear or radioactive material, equipment and technology (rules 24 to 27). Research and development that does not involve handling of source, fissile or radioactive material is exempt from licensing altogether under rule 28, subject to a self-certification that the work is for peaceful purposes.

Full licensing itself remains a three part test: site suitability under rule 6, acceptability of the selected technology and design under rule 7, and financial, managerial and technical capability under rule 8. Newly formed entities face additional disclosure on shareholding, capital structure, and, where they rely on a parent or promoter group company for

funding, a legally binding indemnity undertaking from that parent or promoter, backed by a board resolution.

Entry Point for Private Applicants: In Principle Approval

Rule 5 introduces an in principle approval, available before an applicant has finalised its site or its reactor technology. It is a statement of support allowing the applicant to proceed to negotiate with technology vendors and acquire land, without having first satisfied the full site, design and capability conditions that otherwise gate a licence under rule 3. This lowers the threshold for entering the process, though it remains conditional: it may be revoked, after a hearing, on grounds of supervening public interest, national security concerns about ownership or control, or misrepresentation, and any change in the applicant's credentials since grant triggers a fresh review before the application can be admitted for a full licence.

Foreign Technology Sourcing

Rule 3(2) allows sourcing of reactor technology, Indian or foreign, either directly from the original technology developer or from an intermediate licensed technology provider, and this sourcing route operates alongside Rule 24, which governs import, export, acquisition and transportation of nuclear or radioactive material, equipment and technology. Where the design is of foreign origin, Rule 7(b)(i) requires it to be operational and licensed in its country of origin, with documentary evidence of design certification and of the original developer's concurrence. This operational requirement carries a practical constraint for small modular reactors: SMR designs are currently operational only in Russia and China, so foreign SMR technology sourced from any other jurisdiction would not, on the present state of global deployment, meet this test. The Rules add a filter the Act itself does not specify: the explanation to Rule 3(3) defines eligible countries of origin as those that are self-reliant in nuclear reactor design and supply chain and whose regulatory approvals are trusted globally. No countries are named in the text, and the point should not be the subject of speculation in client facing commentary until the government notifies the list or the criteria are applied in practice.

Safety Authorisation: Scope and the Staged Model

A licence under the Rules is a gateway, not an operating permit. Schedule I to the Regulations identifies four categories of facility requiring safety authorisation: nuclear power plants and reactors, including fusion reactors; other nuclear facilities and plants, covering fuel fabrication, spent fuel and nuclear fuel storage, ore processing, and radioactive waste management; mines of uranium or thorium, including exploration; and radiation facilities, a broad fourth category spanning medical applications such as teletherapy and CT imaging, food irradiation, industrial and research uses, and consumer products. Within this fourth category, a number of lower hazard practices, such as neutron generators, certain diagnostic imaging equipment, and nucleonic gauges, are marked in Schedule I as requiring only registration rather than a full safety authorisation, and the Regulations separately permit the Board to exempt a practice from regulatory control altogether where the exposure risk is negligible. A client's facility should be checked against Schedule I at the outset, since the compliance burden differs materially between the full authorisation track and the registration or exemption track.

For a nuclear power plant or reactor, the Regulations impose a two-step structure. The licensee must first obtain Design Approval, and only then may it apply for safety authorisation across five further stages of the facility's life: siting, construction, commissioning, operation, and decommissioning. Design Approval and the safety authorisation

for siting may be reviewed in parallel, but Design Approval must be secured before siting authorisation is granted, so it sits on the critical path for any project's earliest milestones. The same staged structure applies, with modifications, to other nuclear facilities and plants, to mines, and to radiation facilities, in each case scaled to the hazard potential of the installation. Mines follow a shorter two stage model covering working and closure only. Radiation facilities follow a track built around type approval of equipment, procurement approval, and site or layout approval, ahead of commissioning, operation and decommissioning authorisation.

Points of Practical Significance

A composite application, permitted under Regulation 42(2), lets an applicant apply for safety authorisation spanning several stages, or a stage together with activities incidental to it, in a single filing rather than at each gate separately. This does not reduce the fee payable, which for a composite application is the arithmetic sum of the fees for each stage covered, but it does reduce the number of separate submissions and review cycles a client's project team has to manage.

More consequential for project scheduling is the Board's power, under Regulations 45(9) and 47(4), to identify regulatory hold points at any stage of a facility's lifetime, such as first pour of concrete during construction, or first fuel loading and first approach to criticality during commissioning, beyond which work cannot proceed without a further written permission from the Board. A hold point functions as a go or no go gate embedded inside the construction or commissioning timeline, not merely at its start or end, and clients financing a project against a construction schedule should build these gates into their drawdown and milestone planning rather than treating safety authorisation as a single approval event.

Design Approval itself has a defined shelf life: it remains valid for ten years, or until construction commences, whichever is earlier, and if construction has not begun by expiry it may be renewed against then current regulatory requirements under Regulation 50(3). Notably, the Regulations do not prescribe any timeline within which the Board must grant Design Approval, leaving this stage, which sits on the critical path before siting authorisation, open ended from a scheduling standpoint. A safety authorisation more generally is valid for ten years and cannot in any case exceed the validity period of the underlying licence granted under the Rules, under Regulation 50(1), so a facility's paperwork under the Regulations is always bounded by, and cannot outlast, its status under the Rules.

Extending operation beyond a plant's design life is not something the licensee can apply for directly. Regulation 14 requires the request to come as a referral from the Central Government seeking the Board's written confirmation of safe operability, submitted well in advance of design life expiry, which means life extension carries a government relations step in addition to the technical safety case. Renewal of an ordinary operating safety authorisation, by contrast, turns on a Periodic Safety Review under Regulation 13, a recurring and substantive reassessment against current safety requirements, ageing condition of plant, operating experience, and radiological impact, rather than a one-time filing.

Liability, Insurance, Financial Security and Waste

Chapter VI of the Rules carries the liability regime forward largely as the Act already framed it, giving it procedural form rather than altering the underlying caps. Rule 76 confirms strict, no fault liability on the operator for nuclear

damage, including during carriage, with damage to the means of transport itself carved out to ordinary transport and tort law. Rule 77 requires every operator to maintain insurance or financial security, pledged to the Central Government and maintained at a 1:1.33 security margin, running irrevocably until all spent fuel is removed from the reactor's spent fuel pool. Operators may pool this security jointly in proportion to installed capacity, and a licensee of a Government owned installation is exempted from the insurance requirement, with the Government itself assuming the liability.

A separate and materially lighter regime applies to radiation damage that does not rise to the level of a nuclear incident, covering plants, mines and activities other than power reactors, and consignors during transport of radioactive material. Rule 101 fixes liability on the licensee, subject to natural disaster and armed conflict exclusions, with financial security set by Schedule II on a sliding scale from one lakh to fifty lakh rupees depending on the severity and location of potential deterministic health effects. This is a separate schedule from the nuclear damage liability bands in the Second Schedule to the Act itself, and the two should not be conflated in client materials.

Chapter VII of the Rules establishes two dedicated funds financed through the electricity tariff: a Nuclear Liability Fund funded by an operator levy under rule 108, and a Spent Fuel Management Fund under rule 110 for back end management of spent fuel not repatriated to the country of origin. Rules 111 and 112 require decommissioning financial security to be built up gradually, kept fully segregated from the licensee's other assets, ring fenced from any liquidation, and released only on a Central Government certificate that decommissioning and site remediation are complete.

Under the Regulations, radioactive waste management requires a separate waste authorisation under Regulation 35, distinct from safety authorisation, though the application for it may be combined with the application for the relevant lifecycle stage, and clients are better served filing the two together than sequentially. For radiation facilities specifically, procurement approval under Regulation 30(c) is conditional on the applicant's compliance with the financial security requirements set out in the Rules for safe disposal of the source, decommissioning, and settlement of radiation damage claims. This links a facility level procurement gate under the Regulations to the broader financial security regime established under the Rules, and a client cannot obtain procurement approval without first satisfying that Rules level condition.

Regulation 42(7) requires an applicant to proactively identify and delineate any information in its application that is strategic, sensitive, proprietary, or commercially confidential, for treatment by the Board as restricted information. This is a protocol for how the Board handles submissions internally. It does not, on the face of the Regulations, displace a client's exposure under the Right to Information Act or in third party litigation discovery, and clients seeking genuine protection for proprietary technical information should not treat Regulation 42(7) as a substitute for their own confidentiality arrangements.

Timelines and Enforcement

Under the Rules, Rule 30(2) gives the licensing authority sixty days to return an incomplete application. Rule 32(3) sets a target of one hundred and eighty days from admittance to issue a licence for a facility, plant or mine, and sixty days for a related permission, subject to all requirements being fulfilled. Licence validity is tied to the design life of the plant or reactor, or the term of the mining concession, and life extension beyond design life requires the Board's

written confirmation of safe operability.

Chapter V of the Rules gives the Central Government and the Board broad inspection, investigation and search and seizure powers, including authority to direct on the spot corrective measures. Enforcement actions under rule 75 can modify, suspend, curtail or cancel an approval or a radioactive waste authorisation, or derecognise a designated individual, independent of and in addition to penalties under section 70 of the Act. A licensee aggrieved by an enforcement action may seek review before the Atomic Energy Redressal Advisory Council within fifteen days, with the Council expected to dispose of the matter within ninety days, and a further appeal lies to the Appellate Tribunal for Electricity under section 51 of the Act.

Rule 114 is a significant downside provision for private licensees: on cancellation of a licence or abandonment of a plant, the Central Government appoints an administrator who invites replacement applicants, but the company whose licence was cancelled, its joint venture, and its directors are deemed blacklisted from that replacement bid.

On the Regulations side, the Board may suspend, cancel, or modify a safety authorisation, waste authorisation, or approval on two grounds under Regulation 55: misrepresentation or suppression of a material fact, or conviction of the holder by an Indian court for an offence under the Act. Either ground requires a show cause notice and a thirty day opportunity for the holder to respond before the Board acts. Even during suspension or cancellation, and during the pendency of any appeal, the holder remains bound to comply with the Board's directions on safety and safe storage of radioactive material, under Regulation 55(2). A person aggrieved by a decision of the Board, its Chairperson, its Whole time member, or an officer may apply for review to the Board itself under Section 27(2) of the Act, and decisions of the Board on regulatory matters more generally are separately reviewable by the Atomic Energy Redressal Advisory Council constituted under Section 47 of the Act.

Key Takeaways for Private Investors

- A composite, non-severable licence structure means site, technology and capability workstreams must be sequenced together from the outset; there is no route to a partial or staged licence.
- In principle approval offers an earlier, lower cost entry point to begin vendor negotiations and land acquisition, but it is expressly revocable and does not substitute for the full site, design and capability tests.
- A licence under the Rules is necessary but not sufficient: construction and operation each require a separate safety authorisation from the Board under the Regulations, with Design Approval on the critical path before siting authorisation is granted.
- Regulatory hold points embedded within construction and commissioning, such as first pour of concrete or first fuel loading, function as go or no go gates and should be built into drawdown and milestone planning rather than treated as a single approval event.
- Captive nuclear power is explicitly framed to reach data centre, semiconductor and AI linked demand, not only heavy industry, which is directly relevant to any client evaluating captive or co located power for high load digital infrastructure.
- The insurance and financial security obligations under both instruments are continuous and substantial, running

from before fuel loading through to full decommissioning, and should be modelled into project financing from the earliest stage rather than treated as a closing condition.

- Loss of a licence carries a blacklisting consequence for the licensee, its joint venture partners and its directors, which sharpens the commercial stakes of compliance relative to conventional infrastructure licensing.

What Remains Open

The Rules defer substantive technical and safety standards, such as design approval criteria, safety authorisation conditions, and security and safeguards implementation, to the Regulations and to further technical guidance the Board is expected to issue; the two instruments read together establish the process but not every underlying technical benchmark. Tariff determination for supply of electricity or for other services is likewise deferred under rule 106 of the Rules to a future notification based on the recommendations of a separate committee; the Rules provide the funding and financial security mechanics but not the tariff methodology itself.

On confidentiality, Regulation 42(7) of the Regulations obliges an applicant to flag strategic, sensitive or commercially confidential information for restricted treatment within the Board's internal handling, but this does not, on the face of the Regulations, displace a client's exposure under the Right to Information Act or in third party litigation discovery, and clients seeking genuine protection for proprietary technical information should not treat it as a substitute for their own confidentiality arrangements.

Comments on both the Rules and the Regulations are due to the Department of Atomic Energy by 4 September 2026.

Format for Suggestions and Feedback can be accessed here: <https://dae.gov.in/public-consultation-on-draft-shanti-rules-and-draft-shanti-regulations/>

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