



CAG APPRAISAL OF AERB: SOME MISPLACED CONCERNS

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The Comptroller and Auditor General (CAG) of India has appraised the Atomic Energy Regulatory Board (AERB) as standing “on a very tenuous ground”.¹ This confirms the assertions made by many who have long-hinted the imperatives to “bolster” the status of the nuclear regulatory body. Certainly, streamlining the regulatory practice is warranted but ‘only’ the AERB should not be considered as the foundation of India’s nuclear regulatory process, and a purely “counting and accounting” method should not be followed to evaluate its effectiveness.

The CAG report draws attention to the critical issue of the nature and functioning of the regulatory body which is also being addressed by the Nuclear Safety Regulatory Authority (NSRA) Bill, presented in the Parliament in 2011. When the Parliament initiates a final call on this, it may be useful to take some of the CAG recommendations on board and ponder over some misplaced concerns it has brought to the fore.

Appraising the Appraisal

What prompted the CAG to undertake an appraisal of the structure, status, and effectiveness of the AERB now is the current “national and international regulatory scenario and criticality of the issue of radiation risks and safety”.² Apparently, CAG has not included in the scope of its appraisal the technical capabilities of AERB staff, appropriateness and effectiveness of its various regulatory procedures.

Moreover, most of the findings in the appraisal are replication of the oft-discussed real as well as perceived legal frailties of AERB except that it furnishes some factual evidence. Such an appraisal could have been undertaken long ago to improve the organisational accountability,

simultaneously pacifying the anti-nuclear sentiments and paving the way for a true nuclear renaissance in India.³

CAG appraisal appears to believe that AERB is already under “regulatory capture”. It concludes that the legal status of AERB is “subordinate to the Central government” and it “did not have the authority for framing or revising the rules relating to nuclear and radiation safety”. CAG listed out AERB’s failure to perform many crucial duties during the last five years: 27 safety documents yet to be formulated; unavailability of a national nuclear and radiation safety policy; weak consenting process and system for monitoring and renewal of radiation facilities (91% of X-ray facilities had not been registered with AERB); irregularities in 85% of regulatory inspections; non-association with the emergency preparedness exercises; unavailability of legislative framework for decommissioning of facilities; and slow liaisons with international organisations.

Broadly, the perceived oversight negligence by AERB is noteworthy for two aspects: (1) the interest of non-state actors’ in nuclear materials. Any slippage of such materials would create havoc; (2) any short-sightedness or lackadaisical attitude towards nuclear safety and security issues would adversely impact public perception on nuclear technology and consequently lower the *social acceptance of nuclear energy* programme in India.

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However, CAG seems to have overlooked the instances of strict regulatory actions by AERB in spite of its perceived legal infirmities. Besides imposing fines, AERB is known to have directed halt of construction of nuclear plants on many occasions; shutting them down for some periods even for minor safety breach. Construction work of the fifth and sixth

units of Rajasthan Atomic Power Station was ordered to be stopped for a week when there was some problem of industrial safety. Similarly one unit of Kakrapar Atomic Power Station (KAPS in Gujarat) was asked to shutdown in 2004 to set right the unexpected surge in power. A recent report in *Business Standard* reveals that the AERB carried out 47 regulatory inspections, comprising 25 scheduled and 22 special inspections in 2011-12 during which many shortcomings in safety design and safety support systems based on operating experience were identified.⁴

If the audit team understood the reasons for the apparent discrepancy in the number of documents planned and finalised, the criticism on that count would be relatively mute. Formulation of safety documents is a dynamic process and the final decision is based on a multilayer system of committees and experts taking into account safety reviews, need-felt during consenting, international practices, new regulatory or technological developments, etc. Several factors also determine the prioritisation of specific document preparation: availability of documents from the IAEA; requirement of the document to conduct regulatory activities; availability of national experience/expertise; confidence in established local practice. They are decided on a case by case basis and not all documents identified at one point necessarily be published. Similarly, new documents may be identified based on reviews whose requirement may be more pressing. Moreover, during the deliberation of all complex issues, AERB ensures that the views of stakeholders, experts, and the regulators are adequately taken into consideration, which requires adequate time to resolve.

The issue of 52,173 medical X-ray units functioning without AERB registration, therefore, assumed out of regulatory control, suggests that there might be some communication gap between AERB and the CAG audit team. The fact is, the AERB with support of BARC has trained 125 middle level officers from laboratories of DRDO and CSIR located in different regions and collected safety significant information on about 30,300 X-ray units. The information included the

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name, addresses, types of machines, lay outs, availability of protection accessories, personnel, etc. This programme covered all 500 districts in the country.

Moreover, AERB with support of BARC has approved hundreds of combinations of X-ray tubes, couches and generators of all major and many minor manufactures. It is getting help from manufactures for

ensuring that quality assurance test is carried out at site before commissioning the new units. The AERB has notified long ago the surveillance procedures for medical uses of radiation under the Radiation Protection Rules (1971), and has also issued a Safety Code for Medical X-ray Equipment and Installations in 1986 with subsequent revisions.⁵ All State Governments will start their independent Directorates for X-ray safety soon.

The Misplaced Concerns

Though CAG's advocacy for revamping AERB is timely and valuable, its idealisation of regulatory practices followed in other countries i.e., USA, Canada, UK, Spain, France, etc.⁶ as a model for India, is naïve. In fact, no model of nuclear regulatory mechanism can claim to be 'perfect' in the world. The *statutory* Nuclear Regulatory Commission (NRC) of United States is, as found by the Union of Concerned Scientists, "not always served the public well in 2011".⁷ It is found that the NRC is allowing 47 reactors to operate despite known violations of fire-protection regulations. Further, it has allowed 27 reactors to operate even though their safety systems are not designed to protect them from earthquake-related hazards identified in 1996. CAG seems to be ignorant of the draconian measures used by Canadian political leaders to discipline Ms Linda Keen, the Chairperson of the Canadian Nuclear Safety Commission for carrying out the mandate of the Commission without fear or favour.⁸

While striving to get the AERB to adopt international best practices, India must not fall into *over-concerned parallelism syndrome*. Each time a problem related to nuclear technology takes place anywhere, a section of the public draws baseless parallels to India's programme. They tend to forget that nuclear risks, to a great extent, are

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location-, and technology-specific. The panic based on the idea that ‘nuclear activity anywhere is a threat to humanity everywhere’ is misplaced, overemphasized, and in the process the specificities and achievements of nuclear projects are overlooked.

Regulatory independence is essential to perform oversight duties but watertight compartmentalisation of different organs of the nuclear establishment would create unnecessary factionalism. Ensuring nuclear safety and security is a coordinated effort and utilising the expertise of other wings and sister organisations is certainly prudent. Too much emphasis on procedural issues will drive the organisation away from substantive needs and the integrity of the establishment can get diluted.

The CAG found independence of AERB is “circumscribed” as, beside other factors, “there is no institutional separation of regulatory and non-regulatory functions”. For that matter, even if there were an “independent” regulatory institution with clear-cut division of responsibilities, where will the country get separate set of scientists who will exclusively run power plants and another set of scientists who will look into the regulatory matters?⁹ Currently, the scientific workforce that runs both the regulatory and operational aspects of nuclear programme is absorbed from the institutions run by the Department of Atomic Energy – the promoter of nuclear energy programme in India. Therefore, to enhance the independence and efficiency, CAG could have aimed at the root – streamlining the technical education system, especially nuclear science in universities and colleges in the country.

Despite the frailties in the regulatory system as highlighted by the CAG report, AERB must be commended for meticulously following all prescribed processes for consenting nuclear power plants (NPPs) and radiation facilities. But CAG prescription to AERB to make further efforts to eliminate delays in siting consents of NPPs to avoid time and cost overruns suggests that CAG has placed the entire siting onus solely on the AERB. Delay in siting process is caused primarily because of the public resentment and anti-nuclear movements at the proposed sites. In the post-Fukushima days,

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postponement and delay in new nuclear projects can be witnessed globally. The real issue is ‘public acceptance’ of nuclear power. CAG could have enquired into this aspect and prescribe how to foster greater public support for nuclear projects.

The CAG has also pointed the half hazard regulatory inspections (RIs) of radiation facilities. “While the process of RIs in respect to nuclear fuel cycle facilities including NPP was being followed as prescribed

by AERB, there were significant shortfalls in RIs in the case of radiation facilities”. In fact, the technologists employed in the installations can be designated as Radiation Safety Officers (RSOs) for the installations. The urgent need rather is to formulate a proper ‘nuclear information management’ scheme to disseminate knowledge on the magnitude and implications of nuclear activities in the country.

Pervasive ignorance of radiation hazards prevailing at the societal level and negligence by the users of the radiation sources was an indication when the gamma irradiator in Delhi University landed in Mayapuri scrap market in April 2010. In a sense, the neglected dimension of radiological safety and security in India that the CAG has identified is an outgrowth of the lopsided national nuclear discourse. The media, academia, scientific community, and the public at large have been more interested on the issue of nuclear weapons and nuclear power plants than anything else. Equally, the governments in power have been extra cautious to address all requirements in these matters. For example, the two legislations – the WMD Act 2005 and the Civil Liability for Nuclear Damage Act 2010 – were promptly formulated to expedite the nuclear energy expansion programme and to see the Indo-US civil nuclear cooperation smoothly realised. On the other hand, as alleged by CAG, even after the Mayapuri incident no

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effective regulatory response mechanism to control, “trace and discover lost and/or orphan radioactive sources in the country” is available. The proposal in 2011 to provide Mobile Radiation Detection Systems to fifty cities across the country¹⁰ as part of the preparedness to handle radiological emergencies has been delayed.

The assessment that the nuclear regulator can impose fines only up to a maximum of Rs 500, for violations related to radiation facilities, seems erroneously interpreted. Section 24 of the Act has expressly made provisions for just and reasonable punishment for serious violations. It clearly enumerates that safety violations of the Atomic Energy Act are punishable with *imprisonment for a term which may extend to five years*, or with fine, or with both. The sub-section 30(3) of the Act appears to refer to minor administrative lapses but the sub-section clearly states "otherwise expressly provided in this Act".¹¹

Lastly, CAG observes that "the cost of decommissioning could exceed the cost of construction of such facilities, after providing for inflation" considering the span of decommissioning periods. In that case, India is back to square one – is nuclear energy worth harvesting? Certainly, CAG has overlooked the life span of a NPP and the profit it accrues over a long period of its operation till it is decommissioned.

Hope for the Best

Objective appraisal of regulatory effectiveness, and persistent quest for achieving organisational integrity, is warranted. However, maintaining absolute independence is probably the greatest challenge and unachievable for any oversight organisation. While striving to strengthen nuclear regulatory mechanism, the aim should be to develop a national nuclear safety-security culture considering the ground realities – 'how much capacity do we need', and 'how best can we make use of the capacity we have'. Parliament is presently seized of the matter and the NSRA bill with recommendations of the Parliament Committee on Science & Technology and Environment will initiate necessary follow up. In this pursuit, CAG's appraisal and recommendations, leaving some critical remarks aside,

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may help leveraging the legal status and functioning of the AERB more effectively.

Notes

¹The author sincerely thanks Dr. K.S. Parthasarathy, former Secretary, AERB, for many important inputs and remarks which are suitably incorporated in this narration. However, views expressed are solely of the author.

¹ "Report of the Comptroller and Auditor General of Indian on Activities of Atomic Energy Regulatory Board for the year ended March 2012", Report No. 9 of 2012-13, <http://www.indiaenvironmentportal.org.in/files/file/Performance%20audit%20on%20activities%20of%20Atomic%20Energy%20Regulatory%20Board.pdf>

² Ibid, p. v.

³ Jaideep Prabhu, "A Nuclear Disaster Waiting to Happen", *Centre Right India*, August 27, 2012.

⁴ Sanjay Jog, "AERB Detects Flaws at Nuclear Plants", *Business Standard*, September 04, 2012.

⁵ "Safety Code for Medical Diagnostic X-Ray Equipment and Installations", AERB Safety Code No. AERB/SC/MED-2 (Rev. 1), October 5, 2001, <http://www.aerb.gov.in/t/xray/med-2.PDF>

⁶ CAG claims to have "attempted a comparative study of the systems prevailing in AERB with the best practices available in other countries", n.2, p. 64.

⁷ David Lochbaum, "The NRC and Nuclear Power Plant Safety in 2011: Living on Borrowed Time", *Union of Concerned Scientists*, http://www.ucsusa.org/assets/documents/nuclear_power/nrc-nuclear-safety-2011-full-report.pdf, March 2012, p. x.

⁸ "Nuclear Safety Watchdog Head Fired for 'Lack of Leadership' Minister", <http://www.cbc.ca/news/canada/story/2008/01/16/keen-firing.html>, January 16, 2008.

⁹ "The Missing Nuclear Regulator?", <http://www.livemint.com/2012/08/26214512/OurView-The-missing-nuclear.html>, August 28, 2012.

¹⁰ Vishwa Mohan, "50 Cities to Get Mobile Kit to Trace Radiation", *The Times of India*, October 07, 2011.

¹¹ "CAG Conclusion of AERB Incorrect: Former Official", <http://www.business-standard.com/generalnews/news/cag-conclusionaerb-incorrect-former-official/50435/>, August 31, 2012.



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