

# Uranium Mining in Meghalaya: Simmering Problem

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There is intense opposition to the uranium mining project in the West Khasi Hills district of Meghalaya. Yet the state government and central institutions in charge of nuclear energy are intent upon continuing with the project.

One of the authors (MVR) would like to thank Neeraj Vagholikar of Kalpavriksh and Sharad Lele of the Centre for Interdisciplinary Studies in Environment and Development in the Institute for Social and Economic Change for forwarding several news reports pertaining to the public hearing.

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The relatively peaceful state of Meghalaya (“abode of clouds”) in the trouble-torn north-eastern region of India is uneasy these days due to a proposed uranium mining project in the West Khasi Hills district. On June 12 of this year, a public hearing to discuss the environmental impact of the project was held in Nongbah Jynrin, West Khasi Hills.

According to the Environmental Notification of 2006, the purpose of such a hearing is to ascertain the views of “concerned persons having a plausible stake in the environmental aspects of the project or activity”. These aspects are supposed to be laid out in the Environmental Impact Assessment (EIA). But, contrary to the norms laid out in the notification, the EIA was not available to the public either in electronic form or in paper form at various designated government offices. Nor was its executive summary available on the state Pollution Control Board’s web site, as stipulated in the norms, since such a web site does not exist to start with.

Nevertheless, enough was known about the problems arising from uranium mining for many in the state to resist the project. One of the leaders of the opposition, the powerful Khasi Students Union (KSU), called a 36 hour bandh. Despite the

government’s efforts to thwart the strike, for example by directing all government employees to attend office [Anonymus 2007], the bandh was largely successful. The public hearing was held in the middle of this strike. About 700 people attended the meeting; a majority of them were opposed to the project [Correspondent 2007].<sup>1</sup>

Despite this opposition it appears that authorities are bent upon proceeding with the uranium mining project. The state government’s response to public opposition has been to set up an all-party committee to try and achieve consensus on mining [Singh 2007]. The Uranium Corporation of India (UCIL), for its part, has announced that it will be investing Rs 2,000 crore in mining projects in Andhra Pradesh and Meghalaya, even though the Meghalaya project has not received environmental clearance [Sinha 2007].

## Motivations and Impacts

The stakes involved are high. The proponent of the project is the UCIL which is currently unable to supply the fuel material required to run the Nuclear Power Corporation’s atomic reactors [Subramaniam 2007]. India has been unable to import uranium because of the rules of the 44-member Nuclear Suppliers Group of countries that manage international nuclear trade with a view to preventing proliferation. Trying to circumvent these rules and importing uranium has been a major motivation for the US India nuclear agreement [Mian and Ramana 2005]. Thus far uranium has been mined only in the Jaduguda area in Singhbhum,

Jharkhand. But production from that area is no longer capable of keeping up with the growing number of nuclear power stations. Some nuclear reactors have been shut down partly because of the lack of uranium [PTI 2007].

Outside of the Singhbhum area, Meghalaya is said to have the largest reserves of uranium in India. Meghalaya's minister for mining and geology announced in the legislative assembly on June 21, 2004 that the state has 9.22 million tonnes of ore. Given the quality of ore expected, that should yield about 9,500 tonnes of uranium [NENA 2006]. It is not surprising therefore that R M Sinha, director of the Atomic Minerals Directorate (AMD), would state, "Our main concentration now, after Singhbhum, is on Meghalaya" [Subramanian 2006].

The saga of uranium in Meghalaya began with extensive explorations carried out by the AMD in the 1980s [NEA 1994: 157]. In 1990, AMD confirmed the presence of a rich vein of uranium. Soon there was talk of setting up a mine and mill during the Eighth Plan period (1992-97) with a capacity of 250 tonnes/year [ROI 1993]. By the mid-1990s, uranium mining had become a subject of debate in the Meghalaya legislative assembly. According to S K Malhotra of the DAE, "UCIL is

trying its best to start mining since 1998" in Meghalaya [Correspondent 2006]. In June 2006, Ramendra Gupta of UCIL announced that the "road to the mining area had already been constructed" and that mining would start "next year" pending a clearance from the environment ministry [PTI 2006].

Uranium deposits occur along the southern fringe of the Meghalaya plateau, in Domiasiat, Wahkyn and Tyrnai. They occur amidst sand stone at a shallow depth below the surface. These deposits have an average grade of about 0.10 per cent ( $U_3O_8$ ). In other words, to obtain each kilogram of uranium, a thousand kilograms of ore will have to be processed at a uranium milling plant. The bulk of it will be discarded as waste. These wastes, usually called mill tailings, are contaminated with toxic heavy metals, such as molybdenum, arsenic, and vanadium, and with radioactive materials, principally thorium-230 and radium-226. The radium-226 decays into radioactive radon gas which can spread to considerable distances through the air [Eisenbud and Gesell 1997]. Epidemiologic studies of underground miners from around the world have conclusively shown that inhalation of radon increases the risk of lung-cancer; there is supporting evidence from experimental

studies of animals and from molecular and cellular studies [BEIR 1999].

Many of the other non-gaseous contaminants can affect the health of populations through groundwater and locally grown food products. At virtually all us uranium milling sites, tailings have contaminated the groundwater according to the us. Environmental Protection Agency; once contaminated, "the chance of returning an aquifer to premining water quality is minimal" according to the us Nuclear Regulatory Commission [Makhijani et al 1995: 121].

The leftover tailings are usually stored in tailing dams, which are subject to the risk of dam failures due to earthquakes or strong rains. Such failures have repeatedly occurred all over the world. For example, there was a spill involving 1,000 tonnes of contaminated sediment and 370 million litres of contaminated water in Church Rock, New Mexico, us, in July 1979 [Wasserman and Solomon 1982].<sup>2</sup> An example closer home is an accident that occurred on December 24, 2006 near Jaduguda when one of the pipes carrying radioactive wastes from the uranium mill to a tailing pond burst, and thousands of liters of radioactive waste spilled into a nearby creek for nine hours before the flow of the radioactive waste was shut off.

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Rather than treat the matter with the seriousness it deserves, DAE officials have merely called it a “small leak”, adding that it was of no risk to anyone [Krishnan 2007].

Uranium mining and milling have extracted a toll on public health the world over. This is best illustrated by the experience at Jaduguda area, where increased incidences of births with congenital deformities and other undesirable outcomes has been widely reported [Rahman and Basu 1999; Tiwari 1999; Sonowal and Jojo 2003; Gadekar, Shreekumar and Gadekar in preparation]. Increases in birth defects, stillbirths, and other adverse outcomes of pregnancy have been reported in the case of the Shiprock uranium mining area in us are well [Shields et al 1992]. Similarly an excess risk of leukaemia mortality was observed in the vicinity of uranium mills in Spain [López-Abente, Aragonés and Pollán 2001]. Much better documented are the occupational health impacts on uranium miners, especially increased incidence of lung cancer [BEIR 1988, 1999; UNSCEAR 2000]. There is no reason to believe that uranium-related activities in Meghalaya would cause any less damage to public and occupational health.

### Land, Forests, Livelihoods

Meghalaya is a tiny state with total geographical area of 22,429 sq km and with a population of 23,18,822 persons (2001 Census). Situated on the Shillong plateau, Meghalaya is a conglomeration of eroded surfaces. Its prominent topographic features are Garo Hills, Khasi Hills and Jaintia Hills. The state is traditionally inhabited by indigenous groups like the khasi, jaintia, garo and mikir. These indigenous populations (tribals) constitute 86 per cent of state's total population. The state is divided into seven administrative districts and they are (1) Jaintia Hills district, (2) East Garo Hills, (3) West Garo Hills district, (4) East Khasi Hills district, (5) West Khasi Hills district, (6) Ri-Bhoi district, and (7) South Garo Hills district.

In Meghalaya, the forest and land are managed by the respective district councils of Khasi Hills, Jaintia Hills and Garo Hills as per provisions of the “sixth schedule” of the Constitution of India which vest more rights to the tribal landholders. Of the state's estimated total

forest land area of 8,514 sq km, only 993 sq km is directly under the control of the forest department. In other parts of the north-east too, the government controls only a small portion of the total forest land.

The indigenous people have strong traditional systems for land use and forest management. In the Khasi Hills, various categories of forests exist, each of which is managed according to old customs of khasis. The customary pattern of management of forests was determined by the nature of ownership over the forest resources.<sup>3</sup>

Before the enactment of the Constitution, the Khasi Hills were a conglomeration of petty states, semi-independent in character, and governed by local tribal chieftains, viz, the ‘syiens’, ‘lyngdohs’, ‘wahadars’ and ‘sirdars’. These chiefs had administrative as well as judicial powers. But according to the customary laws, he could perform no act of any importance without first consulting and obtaining the approval of his durbar, thus limiting possibilities of autocracy. “The council had powers to make laws of allotment, occupation, use or the setting apart of land for the purpose of agriculture or grazing or for residential or other non-agricultural purposes or for any other purpose likely to promote the interests of the inhabitants. In exercise of these powers, the district council very soon made certain laws and regulations relating to land matters” [Das 1968: 184].

There is every danger that uranium mining, as well as other kinds of mining, would seriously affect the indigenous livelihood system. Indigenous people are traditionally self-sufficient, relying on products from forests, and with distinct cultural identities. Their culture and livelihood are intrinsically linked with the land and forests. As a result, any threat to land and forests is not merely an economic issue but also constitutes an attack on their identity. This has been seen in other sites of uranium mining as well. For example, in the us, some native American peoples have been seriously affected [Eichstaedt 1994]. Within India, those paying the price for uranium mining in Jaduguda largely belong to the indigenous Santhal Munda, and Ho tribes.

A related concern has been that of a large-scale influx of non-indigenous

people into the region. As the Meghalaya People's Human Rights Council (MPHRC) expressed “The illiterate and semi-literate indigenous Khasi will be forced to move out of their homes and landholdings to be supplanted by technologically advanced communities from outside the state. The mining township will become like military cantonment prohibited to all local people. This will upset the demographic structure of the areas, and ultimately of the entire state, thus not only rendering us a minority but also reducing us to the level of unwanted outsiders in our own land. This will have a fatal and tragic impact upon our small Khasi microscopic community.”

Even in the absence of uranium mining, there has been opposition to immigration. In recent decade, the state witnessed insurrection of insurgent movement like the Hynniewtrep National Liberation Council (HNLC) in Khasi Hills area and Aachik National Volunteer Force (ANVF) from among the garo community. These two insurgent groups have contributed decisively in creating a “law and order” problem in the state. With the commencement of mining, one would expect only more social unrest and conflict.

### Matters of State

The present proposed project requires 351 hectares but about 72 other villages are said to come within a 20 kilometre radius of the project [Mitra 2007]. In order for the project go forward, all the required land acquisition “needs to be ratified by the entire clan or the individual owner”. In view of the opposition to the project mentioned earlier, it should not be surprising that such ratification has not been forthcoming. Some have argued that: “To mine in Meghalaya, DAE will have to change the provision of the VI Schedule of the Constitution” [Dias 2005].

And yet the state has been actively promoting uranium mining. In October 2005, Meghalaya chief minister D D Lapang reportedly told a top UCIL official that UCIL should convince the local people about accepting the projects and conducting public awareness programmes and build a consensus [Subramanian 2006]. But the organisation faces a real credibility problem. UCIL's claim that uranium mining will be safe has not been accepted by the public at large. The majority of the

population of the state does not perceive the project as being beneficial and is against mining. Evidence of this opposition was the overwhelming support for the strike and statewide bandh in June 2007 at the time of the public hearing. The price for leading the opposition has been paid by the KSU: many of its members have been arrested under draconian Meghalaya Preventive Detention Act (minimum punishment is a three-year jail term).

None of this bodes well for democracy. "If the majority of residents in the area surrounding the uranium mines are strongly against its mining because of radiation and other hazards then it would be fair to assume that the government of the day would abide by the peoples' wishes. But in...India...uranium is a strategic mineral [and] hence the property of the state. So up to what extent can the people of Meghalaya resist the mining of this contentious ore is the moot point" [Mukhim 2007]. Going ahead with the project in the face of people's resistance is bound to increase the feelings of

alienation already characterising much of the north-east.

### Conclusions

The proposal for a uranium mining project in Meghalaya has been the subject of a raging debate ever since the idea was first mooted. Over the years, the project has attracted strong opposition from the indigenous people of the state, student bodies, activists, and environmentalists. The public debate has justifiably focused on the health hazards associated with uranium mining. However, the social, cultural, and political fallouts of the project might well be just as important.

### NOTES

- 1 Among them was the Meghalaya People's Human Rights Council (MPHRC), which had to resort to a public interest litigation so as to be allowed to participate.
- 2 To add insult to injury, in a land largely inhabited by indigenous Navajos, the response of the mining company (United Nuclear) was to post warning signs in English; the signs also did not deter livestock from drinking water [Gilles 1996].
- 3 The traditional land use system in khasi community: (a) private forest (Rikynti, Ri Sumar): these forests are owned by an individual or family. The owner is free to manage and use the forests as he or she

desires. (b) Village forest (Adong, Shnong): the village forest is most important forest reserved by the villages as a whole. This forest is used by all bona fide members of a village. However, the use of timber and other forest produce were restricted only to domestic consumption and no commercial transaction is allowed. These forests were managed by the 'sirdars' or headman with the help of the village 'durbar' (the durbar is bodies which enforce customary legislation and deals with administrative matters). (c) Clan forest (Kur): in this category the forest and the land are owned by one clan or more. (d) Community forest (Raid): these forests are under the management and control of the syiems but every member of the particular area has the right to use the forest products.

### REFERENCES

- Anonymous (2007): 'Government Goes All Out to Thwart KSU Bandh: Employees Asked to Attend Office Without Fail', *Shillong Times*, June 9.
- BEIR (1988): *Health Risks of Radon and Other Internally Deposited Alpha-Emitters (BEIR IV)*, Committee on Biological Effects of Ionising Radiation, National Research Council, National Academy Press, Washington.
- (1999): *Health Effects of Exposure to Radon (BEIR VI)*, Committee on Biological Effects of Ionising Radiation, National Research Council, National Academy Press, Washington.
- Correspondent (2006): 'UCIL to Start Uranium Mining in Meghalaya', *Assam Tribune*, April 27.
- (2007): 'Stiff Opposition against Uranium Mining', *Assam Tribune*, June 13.
- Das, J N (1968): *An Introduction to the Land-Laws of Assam*, Panbazar, Guwahati.
- Dias, Xavier (2005): 'DAE's Gambit', *Economic and Political Weekly*, Vol XL, No 32, pp 3567-69.
- Eichstaedt, Peter H (1994): *If You Poison Us: Uranium and Native Americans*, 1st ed, Red Crane Books, Santa Fe, NM.

## Call for submissions

### Theorizing the Contemporary

First Annual Social and Political Theory Workshop Organised by the Programme in Social and Political Theory (PSPT), Centre for Study of Developing Societies (CSDS), Delhi will be held at the CSDS, Delhi on March 22-23, 2008.

The overall theme for the workshop will be Theorizing the Contemporary. The annual workshop series aims at bringing together a range of empirically grounded studies in conversation with concerns of social and political theory in India.

The workshop is primarily aimed at younger scholars who have either completed their PhDs or have been teaching for some time.

The rubric Theorizing the Contemporary is to be a continuing theme for the annual workshop. Theorizing the contemporary is of course, in our view, not possible without adequate historical accounts that throw light on the present. Nor should we understand theory here to mean non-empirical; on the contrary, the PSPT endeavours to start from the empirical ground of our everyday engagement as the ground from where theory must emerge.

The workshop is intended to give younger scholars an opportunity to share their work with those who have been mining the field for some time, including members of the CSDS faculty. It is also intended to bring fresh energies to bear on the existing field. It is aimed mainly at post doctoral students whose ongoing or just completed work has a bearing on understanding the present.

The call for submissions is not meant for fresh new work. Rather scholars participating are expected to present their work in progress before a larger community. However, jointly authored papers will not be accepted for the workshop.

CSDS will bear the expenses of rail travel (AC two-tier) and accommodation at Delhi for all selected candidates from India. Priority will be given to students currently affiliated to Indian educational institutions.

International participants who have studied, or have been working long term, in countries of the global South are also invited to apply. Their local hospitality will be covered by the CSDS, but not their airfare.

Those wishing to participate in the workshop may apply with their current c.v. and a brief description (no more than two typed pages) of the paper they intend to present at the workshop. The last date for sending the applications is 30 January 2008.

Applications are to be sent to: Ms Jayasree Jayanthan, Centre for Study of Developing Societies, 29 Rajpur Road, Delhi, 110054. Applications can also be sent by email to Aditya Nigam: aditya@cads.in

- Eisenbud, Merrill and Thomas F Gesell (1997): *Environmental Radioactivity: From Natural, Industrial, and Military Sources*, 4th ed, Academic Press, San Diego.
- Gadekar, Surendra, Shreekumar and Sanghamitra Gadekar: 'Health Impacts of Uranium Mining in Jaduguda, India' (in preparation).
- Gilles, Cate (1996): 'No One Ever Told Us: Native Americans and the Great Uranium Experiment' in J Byrne and S M Hoffman (eds), *Governing the Atom: The Politics of Risk*, Transaction Publishers, New Brunswick.
- Krishnan, Lina (2007): 'Jaduguda Fallout', *Himal*, April.
- López-Abente, Gonzalo, Nuria Aragonés and Marina Polán (2001): 'Solid-Tumor Mortality in the Vicinity of Uranium Cycle Facilities and Nuclear Power Plants in Spain', *Environmental Health Perspectives* 109 (7): 721-29.
- Makhijani, Arjun, Howard Hu, Katherine Yih: International Physicians for the Prevention of Nuclear War and Institute for Energy and Environmental Research (Takoma Park Md) 1995, *Nuclear Wastelands: A Global Guide to Nuclear Weapons Production and Its Health and Environmental Effects*, MIT Press, Cambridge, Massachusetts.
- Mian, Zia and M V Ramana (2005): 'Feeding the Nuclear Fire', *Economic & Political Weekly*, Vol XL, No 35.
- Mitra, Nandini Maureen (2007): 'Divided We Mine', *Down to Earth*, July 15-16.
- Mukhim, Patricia (2007): 'Must Meghalaya Fuel N-Reactors?' *The Statesman*, June 18.
- NEA (1994): 'Uranium 1993: Resources, Production and Demand', Nuclear Energy Agency, OECD and International Atomic Energy Agency, Paris.
- NENA (2006): 'Meghalaya Has 9,500 Tonnes of Uranium Reserve', *North East News Agency*, July 16-31.
- PTI (2006): 'UCIL Exploring Uranium Ore in Chhattisgarh, Rajasthan, Karnataka', *Press Trust of India*, June 5.
- (2007): 'Nuclear Plants Shut Down for Want of Fuel: Nuclear Power Corp', *Press Trust of India*, October 21.
- Rahman, Aziz ur and Jayanta Basu (1999): 'Living in Death Shadow', *Sunday*, April 4.
- Shields, L M, W H Wiese, B J Skipper, B Charley and L Bennally (1992): 'Navajo Birth Outcomes in the Shiprock Uranium Mining Area', *Health Physics*, 63 (5):542-51.
- Singh, D K (2007): 'Uranium: Meghalaya All-Party Panel to Take it Up', *Indian Express*, August 23.
- Sinha, Arinda (2007): 'UCIL Set to Invest Rs 2,000 cr in AP, Meghalaya Projects', *Financial Express*, October 27.
- Sonowal, C J and Sunil Kumar Jojo (2003): 'Radiation and Tribal Health in Jadugoda: The Contention between Science and Sufferings', *Studies of Tribes and Tribals*, 1 (2):111-126.
- Subramaniam, Kandula (2007): 'Pressing Pause on Deal Will Deepen Crisis at n-power Plants: They Are Very Low on Fuel, Production Hit', *Indian Express*, August 20.
- Subramanian, T S (2006): 'Uranium Crisis', *Frontline*, January 13, 60-65.
- Tiwari, Manish (1999): 'A Deformed Existence', *Down to Earth*, June 15.
- Tol (1993): 'Uranium Discovered in Andhra Pradesh', *Times of India*, November 11.
- UNSCEAR (2000): *Sources and Effects of Ionising Radiation: UNSCEAR 2000 Report to the General Assembly, with Scientific Annexes*, United Nations Scientific Committee on the Effects of Atomic Radiation, United Nations, New York.
- Wasserman, Harvey and Norman Solomon (1982): *Killing Our Own: The Disaster of America's Experience with Atomic Radiation*, Delacorte Press, New York.