

November 2009

Uranium mines in Niger – radioactivity in the streets of Akokan

In November 2009, Greenpeace visited the uranium mines in Niger and the neighbouring mining towns of Arlit and Akokan. The mines are operated by subsidiaries of AREVA, a French nuclear company. During the visit Greenpeace found dangerous levels of radiation in the streets of Akokan. AREVA had earlier claimed that these risks had been identified and addressed.

The people of Akokan are currently exposed to unacceptable radiation risks. A comprehensive independent assessment is needed to ensure that the people of the mining villages are safeguarded from future radiation risks.

Timeline

| | |
|-------------------|--|
| 2003 | Independent laboratory CRIIRAD and local NGO Aghir In'Man identify a number of radiation hazards in the mining towns |
| 2007 | CRIIRAD documents dangerous radiation levels near Akokan hospital |
| 2007 | AREVA confirms widespread contamination in the village |
| Early 2008 | Local NGOs confirm clean up operation undertaken |
| Oct. 2008 | Mining company COMINAK reports contamination has been addressed |
| Sept. 2009 | AREVA confirms to CRIIRAD that a clean up has been done |
| Nov. 2009 | Greenpeace finds Akokan still contaminated |

The Greenpeace mission

A Greenpeace team visited the uranium mining region in Niger between November 1 and November 9 2009. Its aim was to document the environmental impacts and associated human health risks caused by the uranium mines. The visit was prepared in collaboration with the French scientific laboratory CRIIRAD¹ and ROTAB, a network of NGOs in Niger.

Earlier work by CRIIRAD (since 2003) in collaboration with local NGO Aghir In'Man had identified a range of problems related to radioactive contamination. This included the contamination of drinking water with uranium and the presence of radioactive scrap metal in the mining towns.

When AREVA learned about the Greenpeace mission, they invited the team to visit the mining sites. Greenpeace was allowed to document both the open-pit mine SOMAIR and the underground mine COMINAK. Due to restrictions by local authorities, it was not possible to move freely in the area around the mines. The team did a limited independent survey of Arlit and Akokan, and met with local civil society and former mine workers. A comprehensive report on Greenpeace's findings will be published at the beginning of 2010.

However, some early findings require immediate action in order to reduce the risk to the local population.

¹ CRIIRAD = Commission de Recherche et d'Information Indépendantes sur la Radioactivité,
www.criirad.org

The streets of Akokan

In 2007, a CRIIRAD team in collaboration with Aghir In'Man discovered high levels of radiation in the streets of Akokan. In front of Akokan hospital the levels of radiation were up to 100 times higher than normal background levels. The source of the radiation was radioactive waste rock from the mines that had been used for road construction [1]. CRIIRAD reported this fact to AREVA and the local authorities in order to ask for a comprehensive radiological survey and clean-up of the village.

According to documents provided to Greenpeace by AREVA, a survey of the village was organised in 2007 and the high levels of radiation in Akokan were confirmed. AREVA said levels of radiation found on the streets range from 1.15 - 4.12 microSv/hr on contact (microsievert per hour, a measure for radiation dose rate levels)², up to 25 times higher than normal background levels.

According to a letter from the mining company COMINAK dated 6 October 2008, 11 of the identified locations with high radiation in Akokan were cleaned up. In September 2009, AREVA confirmed to CRIIRAD that a detailed mapping had been done of the places where radioactive waste rocks had been re-used [2]. AREVA also said a program of decontamination had been performed under control of the local authorities.

In recent conversation with Greenpeace, AREVA confirmed that the Akokan streets had been clean-up and checked by the Niger Department of Mines in 2008. AREVA provided a map describing radiation levels at those 11 spots after clean-up [3]. According to the map, radiation levels at those locations were close to or at normal background levels following the clean up, implying the town would now be safe.

Greenpeace measurements

Between 5 – 8 November 2009, Greenpeace performed a survey in the streets of Akokan, on and around the 11 locations that AREVA's documents said had been cleaned up. The radiation monitoring instruments used in the survey were an ICX Identifier gammaspectrometer and a Mini-Monitor Series 900 (probe type SL). In this limited survey, Greenpeace identified seven locations with significant radiation levels (see table).

At three locations, the Greenpeace measurements directly contradict the data on the AREVA map. At three spots, radiation levels are higher than 10 microSv/hr at ~5 cm. In one area the levels were as high as 63 microSv/hr at ~5 cm and up to 3 microSv/hr at 1 meter³. Dose rate at ground level is almost 500 times higher than normal background levels. A person spending less than one hour per day at that location would be exposed to more than the maximum allowable annual dose for the public of 1 mSv recommended by the International Commission on Radiological Protection (ICRP) and enforced by legislation in most countries (whole body dose at 1 meter).

² 0.14 - 0.94 microSv/hr at 1 meter. Dose rate at 1 meter is often used to calculate the whole body dose.

³ Dose rate at 1 meter is often used to calculate the whole body dose.

Table: Locations with increased radiation levels, as identified by Greenpeace

| Coordinates location | Description location | Maximum dose rate at 5 cm | Dose rate at 1 m | Dose rate according to COMINAK |
|-------------------------------|---|------------------------------|------------------------------|--------------------------------|
| | | (microSv/hr) background 0.13 | (microSv/hr) background 0.13 | (microSv/hr) |
| N18°42'52.14" E7°20'46.74" | On the road, close to the garden of house 95 (NE hospital COMINAK), opposite 08C waterhydrant, over an area of approx 2 m2 | 0.50 | | 0.1 |
| N18°42'48.18" E7°20'26.34" | In the middle of the road in front of block 82 (houses 8211 and 8212), spread over an area of approx. 25 m2 | 10.00 | | 0.3 (nearby) |
| N18°42'45.30" E7°20'34.74" | In between two drainage covers, between block 45 and 53 (in front of house 5312), spread over an area of approx. 10 m2 | 2.50 | | 0.2 |
| N18°42'57.18" E7°20'39.96" | Behind the COMINAK hospital, next to garden of block 115, over an area of roughly 2 m2 | 63.00 | 2.7-3.0 | 0.7 |
| N18°42'57.90" E7°20'38.28" | On small square between blocks 181-184, about 2 m2 | 49.00 | >2.0 | - |
| N18°42'58.80" E7°20'34.86" | On the street between blocks 188 and 189, about 3 m2 | 5.00 | 1.0 | - |
| N18°42'40.38" E7°20'40.86" | On the middle of the street between block 13 and Pepiniere, area of approx 18x2 m2 (highest levels opposite door next to 1306). | 4.75 | 1.0 | 0.2 (nearby) |

There is a serious risk of direct exposure to radiation for anyone spending time in the streets of Akokan. In addition there is the potential for radioactive dust to be released from these places if there is no protective layer of clean sand on top of the waste rocks.

AREVA's responsibility

The problem of radioactive waste rocks in the streets of Akokan was identified 2.5 years ago. AREVA claims to have adequately responded to the problem in reaction to the CRIIRAD report in 2007, but the problem persists, representing a danger to people of Akokan.

The Greenpeace findings demonstrate that AREVA failed to sufficiently check and clean up the village of Akokan. The survey done in 2008 after decontamination turns out to be shallow and inadequate.

Greenpeace identified seven locations with unacceptably high levels of radiation in a limited radiological survey (a total of 6 manhours was spent walking the streets of Akokan). It is evident that the problem is not limited to the seven locations found; the whole town of Akokan needs to be thoroughly inspected, followed by an exhaustive clean-up.

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The mining companies and AREVA can not be trusted to take care of environmental assessments by themselves. Greenpeace calls for a comprehensive independent assessment to assure that the people of the mining villages are safeguarded from future radiation risks.

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Notes:

[1] Note CRIIRAD N°07-53, *Présence de matériaux radioactifs dans le domaine public à ARLIT et AKOKAN (Niger), à proximité des mines SOMAÏR et COMINAK (AREVA)*, CRIIRAD, 14 May 2007.

[2] Letter from Sébastien de Montessus, Director Mining Business Unit, AREVA to Bruno Chareyron, CRIIRAD, Reference: BUM/DCRE CE 09/004 – YDR/SCT, 8 September 2009.

[3] Plan de Reference, COMINAK Environnement Naturel, 2 October 2008.

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