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CC: Permanent Representatives of members of the Security Council

10th July 2003

Dear Secretary General Annan, Dr ElBaradei and Dr Brundtland,

Failure to Control Nuclear Contamination in Iraq

I am writing to express Greenpeace's grave concerns over the lack of control of nuclear material in Iraq and the failure of the occupying forces to address serious questions about environmental contamination and public health dangers. Greenpeace urges immediate UN-led action to address the situation.

A small Greenpeace team has been working in and around Baghdad for the past three weeks. They have found serious nuclear contamination in a village near the Tuwaitha nuclear facility. A draft summary of their findings is attached. When presented with some of the findings, a US forces health physicist said he would recommend that the International Atomic Energy Agency (IAEA) and the World Health Organisation (WHO) get involved and conduct an assessment as soon as possible.

The radioactive material found by the Greenpeace team was taken from the facility by scavengers from the local community who were unaware of its dangers but were seeking useful material for private purposes such as building material, scrap metal recycling, or for use as storage containers.

Some of the material has been confirmed to be yellowcake, a slightly-radioactive uranium powder that is dangerous if inhaled, which was taken from the IAEA-monitored store near Tuwaitha known as Location C. I understand that the IAEA will soon present to you the findings of their June 2003 inventory of this material.

Of greater concern is that our team also located some much more radioactive, neutron-emitting sources; probably caesium, strontium or cobalt isotopes which are commonly used for industrial or medical purposes. Our concern about such material is three-fold: it is extremely dangerous if handled by unprotected or untrained people; it is not as readily identifiable to the public as is yellowcake; and it is the material of

choice for use in radiological dispersion devices or 'dirty bombs'.

Responsibility of occupying powers in health

The occupying powers take the position that they have sole responsibility for the safekeeping of this material, but they have clearly failed in this responsibility. Some examples of such inadequacy are:

1. Our team was informed by US forces that there was yellowcake in a container in the village a short distance from the facility, but the soldiers said that it was "not their job" to move or secure it. On June 24, our team hired a truck and returned the container to US forces guarding the IAEA's store known as Location C.
2. US forces have been reported as saying that there was "no danger"¹ to the public from nuclear material, but our team was quickly able to locate several highly² radioactive sources in the nearby village of Diala. For example, US forces had been to a school in Diala some time before our team arrived, because it was known that suspect material from Tuwaitha had been taken there. The US forces' radiological survey failed to find a highly-radioactive source (measuring 3000 times background levels of radiation) which our lightly-equipped team located almost instantly near the entrance to the school.
3. In an effort to remove barrels that might have contained yellowcake from use in the community, US forces offered to pay civilians \$3 if they returned barrels. Our team was told that the local cost of replacement barrels was considerably higher than this, so a number of families did not take up the \$3 offer, preferring to keep the barrels for water storage. Our team purchased new barrels and offered to swap them for contaminated barrels, which resulted in several more contaminated barrels being removed from domestic use.

Responsibility of occupying powers in securing 'dirty bomb' material

Eyewitness and press reports reveal that in recent weeks, some highly dangerous radioactive sources were taken from Tuwaitha by people unaware of the dangers. Our small team located three such sources very rapidly, and an anonymous Iraqi official told us that a child had previously been found to be playing with a collection of seven sources.

As the IAEA has warned³, it is possible that such radioactive sources could have been taken from Tuwaitha by people with malicious intent and could fall into terrorist hands. US forces say they cannot secure the 35 square kilometre site, and indeed our team witnessed people still scavenging material as recently as July 3. Given their failure to locate highly radioactive sources in the local villages, we have no confidence that the US forces at Tuwaitha have even adequately searched the unsecured parts of the facility for remaining radioactive sources. Journalists have elsewhere reported failure by US forces to secure such material they have found.⁴

Need for international nuclear experts to be allowed back to Iraq

We understand that the IAEA is willing and able to undertake surveys of the situation and understand that Dr ElBaradei wrote to the occupying powers as early as April 10⁵ to offer its expertise, emphasising the dangers of this material. We find it astonishing that this offer was refused for more than a month, and that when the occupying powers finally allowed the IAEA to return in June, they were not allowed to survey the local communities for contamination, and not allowed to investigate the many hospital reports that civilians have been made ill by such contamination. US forces claim to have made such surveys, but have told us and the WHO that the results are 'classified'

Even more astonishingly, the IAEA team was not allowed to conduct an inventory of the high-level radioactive sources that were stored at the nuclear materials store known as Location C or in other parts of the Tuwaitha complex.

When our team returned the yellowcake to US troops at Location C on June 24 and helped them secure two highly radioactive sources, Lieutenant Colonel Mark Melanson, a health physicist from the US Army Centre for Health Promotion and Preventative Medicine, confirmed there was a radiological danger to the local community, and told us "*I would recommend the International Atomic Energy Agency (IAEA) and the World Health Organisation get involved and do an assessment. They've got involved in other instances, like in Brazil, where sources have ended up being distributed in the community and they actually assess the risks from that.*" On the need to do such an assessment, he said "*The faster it happens the better*". Greenpeace agrees with the Lieutenant Colonel.

Dr Emad Aldin, a health physicist with the Iraq Atomic Energy Commission also calls for international help: *"We need all the help from the United States as the occupying force, and the international organisations like the IAEA and the WHO. If these efforts are united that will solve the problem as quickly as we hope."*⁶

Need for international weapons inspectors to be allowed to return to Iraq

The occupying powers have assumed all responsibility for investigating whether Iraq still contains weapons of mass destruction. We, along with millions of people worldwide, do not believe that the Security Council has delegated this responsibility to the occupying powers on any reading of the Security Council resolutions or the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). On the contrary: the current authority in Iraq is in breach of several Security Council resolutions by refusing to allow UN agencies immediate and unfettered access.

For this reason alone, the inspectors must be allowed to return.

We believe that the Security Council must either insist on the return of its inspectors, or it must declare the occupying powers in breach of the Security Council resolutions 687 (1991) and 1441 (2002).

We also find it astonishing that UNMOVIC, mandated by the Security Council to verify Iraq's disarmament, has not been allowed into Iraq to verify claims by the Australian Prime Minister and US President that weapons of mass destruction have been found in Iraq.⁷

The fact that US forces were unable to locate a highly radioactive source just outside a school that they had surveyed indicates a lack of expertise and/or dedication in locating nuclear material. By contrast, the IAEA has a proven track record in Iraq, as demonstrated in its numerous reports to the UN Security Council, with experience and techniques for detecting tiny amounts of radioactivity all over the country.

Lastly, whether or not radiological dispersion devices or 'dirty bombs' can be classed as weapons of mass destruction, we share the IAEA's concern that uncontrolled radioactive sources in Iraq could be used for malicious purposes. It is clear from our experience and press reports that the occupying powers have not been adequately safeguarding this material, even though officially the US regards such items as a "terrible threat" that "requires a determined and comprehensive international response".⁸

We consider that by keeping information on missing radioactive materials and nuclear contamination 'classified' and thus refusing to share it with international organisations, the occupying powers are breaching at least two Security Council resolutions on combating terrorism: Resolution 1373 (2001) and Resolution 1456 (2003) emphasise the need for increased sharing and coordination of information about unaccounted-for nuclear material with international organisations. The occupying powers are also in breach of their undertaking to co-operate in facilitating the application of International Atomic Energy Agency safeguards on peaceful nuclear activities under the NPT.

Conclusion

Greenpeace calls on the UN and other international organisations to insist on full access, not only to Tuwaitha but to other sites in Iraq where radioactive material might be found, because the occupying powers have clearly been unable or unwilling to fulfil their responsibilities under the Geneva conventions to protect the health of the people of Iraq, and their responsibilities under UN resolutions to control nuclear material.

Thank you very much for your time and concern on this matter.

Gerd Leipold

Executive Director, Greenpeace International

NOTES

¹ *Washington Post* June 6th 2003: "The U.S. military has conducted an initial radiation survey in the villages, and a health study is set to begin in coming days. There is no health risk to the population or the soldiers guarding the site,"

said Mickey Freeland, part of the U.S. team involved in the hunt for Iraqi weapons of mass destruction.

² One source produced radiation levels 10,000 times those of background readings.

³ "The radioactive sources, some very potent ones, could get on to the black market and into the hands of terrorists planning dirty-bomb attacks," said Melissa Fleming, an IAEA spokeswoman. *Guardian* Wednesday May 14, 2003.

⁴ For example on May 12, 2003 the New York Times reported that a radioactive source west of Baghdad had not been secured by US forces, and a nuclear expert Army's Mobile Exploitation Team Alpha was reported to have 'said he was not concerned that terrorists or elements of the deposed government might try to steal the material to make a crude nuclear bomb. He said exposure to the radioactive material itself would be lethal to anyone who tried to move or steal it. "It is a self-solving problem," he said.'

⁵ And this call was repeated on May 19, 2003. "I am deeply concerned by the almost daily reports of looting and destruction at nuclear sites," Dr ElBaradei said in a statement. He said he was especially worried "about the potential radiological safety and security implications of nuclear and radiological materials that may not longer be under control." "We have a moral responsibility to establish the facts without delay and take urgent remedial action".

⁶ "To deal with this crisis and to solve this problem and pass through this mess we need all the help from the United States as the occupying force, and the international organisations like the IAEA and the WHO. If these efforts are united that will solve the problem as quickly as we hope." Dr Emad Aldin, Health Physicist, Iraq Atomic Energy Commission, interviewed by Greenpeace July 1, 2003.

⁷ George W Bush May 30, 2003. Widely reported, and the CNN transcript reads: "We've found the weapons of mass destruction. You know, we found biological laboratories. You remember when Colin Powell stood up in front of the world and he said Iraq has got laboratories, mobile labs to build biological weapons. They're illegal. They're against the United Nations' resolutions and we've so far discovered two. And we'll find more weapons as time goes on" (CNN transcript is at <http://edition.cnn.com/TRANSCRIPTS/0305/30/wbr.00.html>)

John Howard, June 16,2003: "United States and United Kingdom intelligence agencies have concluded that at least one of the three vehicle trailers found in Iraq is a mobile biological weapons production facility." *Hansard* Monday June 16, 2003 pg 15610 (see <http://www.aph.gov.au/hansard/hansreps.htm>)

⁸ "Our governments must act, individually and collectively, to identify all the high-risk radioactive sources that are being used and that have been abandoned". US Energy Secretary Spencer Abraham, speaking of the worldwide security dangers of missing industrial sources, in his address to the IAEA conference "Security of Radioactive Sources" March 11, 2003.. The USA was co-sponsor of the conference. http://www.usembassy.it/file2003_03/alia/A3031206.htm

GREENPEACE

28th June 2003

Preliminary survey around the Tuwaita facility: DRAFT

Dates: June 16-24, 2003

Location: Al Tuwaitha, Baghdad, Iraq

Objectives:

A small Greenpeace team, including radiation experts, conducted a preliminary and basic survey of the area around the 'looted' Tuwaitha Nuclear Research Facility to ascertain whether there is any significant radioactive contamination in the surrounding communities.

Activities:

The following steps have been taken:

- Intensive contacts with key people in the local communities
- Follow-up of leads from media and personal contacts
- Random measurements in the villages neighbouring the facility
- Study of the remainders of the nuclear facility

Summary:

In a week's time, several industrial radioactive sources were found in the community. The presence of yellow cake (uranium oxide) was discovered at a number of locations. Furthermore, a number of other looted objects indicate the presence of more radioactive materials outside the facility.

Results:

- Al-Majidat primary school

A strong radioactive source was found near the Al-Majidat primary school in Tuwaitha. The source lay on the ground on the corner of the street, opposite to the entrance of the school. It produced high radiation levels on the street, in the backyard of the neighbouring house and at the entrance of the school.

<i>Possible radiation:</i>	<i>neutron source (americium?)</i>
<i>Measured count rates:</i>	<i>up to 3000x background radiation</i>
<i>Measured dose rates:</i>	<i>up to 700 $\mu\text{Sv/hr}$^{8[1]}</i>

Standing on the corner of the street for 2 hours would breach the annual dose limit for members of the public under International Commission on Radiological Protection (ICRP) standards^{8[2]}. Near the entrance of the school the dose rate was approximately 10 $\mu\text{Sv/hr}$, in the school values of 1.5 $\mu\text{Sv/hr}$ were measured. Dose rates at the entrance of the neighbouring house were 100-200 $\mu\text{Sv/hr}$.

The source was removed on 23 June 2003 by a team of unidentified Iraqi experts.

- Powerful radioactive source in house

Extremely high radiation levels were discovered in a house between the nuclear facility and Al-Majidat primary school. The source was identified after all metal objects that were taken from Tuwaitha had been removed from the house. The source was a black cylindrical metal object, weight ~17 kg, size ~15 cm.

<i>Possible radiation:</i>	<i>high-energy gamma source</i>
<i>Measured count rates:</i>	<i>overload ($>10^5$ counts per second)</i>
<i>Measured dose rates:</i>	<i>2.3 mSv/hr at 40 cm from the source</i>

In the house, the people had been continuously exposed to dose rates varying from 200 up to 2000 $\mu\text{Sv/hr}$. In only half an hour, the maximum annual dose according to ICRP standards could be exceeded. The people have been living for more than 6 weeks next to the source. The received total dose in this time period poses a serious risk to their health.

The source was moved from the house to the backyard on 23 June 2003. On 24 June 2004, the

nuclear expert team from the US army has taken the source to the nuclear waste storage on the facility.

- Small source in the field near the school

A small industrial radioactive source was found in the field next to the school. It was a small metal plate, diameter ~6 cm.

<i>Possible radiation:</i>	<i>low energy gamma source</i>
<i>Measured count rates:</i>	<i>300x background</i>
<i>Measured dose rates:</i>	<i>~3.5 μSv/hr</i>

The Greenpeace team removed the source on 23 June 2003.

- Yellow cake canister

In a field between the facility and the village, right next to a busy road, an object containing remains of yellow cake (uranium oxide) was discovered. The canister is probably part of a yellow cake processing system.

<i>Possible radiation:</i>	<i>alpha, beta and gamma radiation</i>
<i>Measured count rates:</i>	<i>>1000x background inside the canister</i>
<i>Measured dose rates:</i>	<i>>20μSv/hr inside the canister</i>

Around the canister, slightly elevated levels of radiation were measured. Apparently, the powder had spread outside the canister. The canister had several holes, one of which was large enough for children to climb through. Although yellow cake does not produce high dose rates, inhalation of the powder is very toxic and carcinogenic (alpha radiation is emitted in lungs and other organs).

A sample of the yellow powder was analysed by Dr. Shalabi from the Jordan University of Science and Technology, who confirmed that this was indeed yellow cake. His analysis proved the presence of high concentrations uranium in the sample. According to Dr. Shalabi, the uranium oxide was 10-15 years old. The amount of yellow cake inside the canister was estimated to be 2-4 kg. The canister was sealed by the Greenpeace team in collaboration with the local community, and delivered back to the Tuwaitha nuclear facility on 24 June 2003.

- Lids from barrels

Two rusty lids from yellow cake storage barrels were found. Remnants of yellow cake were found on the inner side of the lids. The rusty outside of the lids was slightly radioactive, giving readings up to 40x background.

The family had dumped the barrels after they heard the stories about radioactivity, but kept the lids. The barrels were dumped in the neighbouring river, but were removed by others shortly afterwards.

- Looted materials

On various locations in Tuwaitha and neighbouring villages, objects taken from nuclear laboratories were found.

- Two old radioactive sources (no activity left): Co-57, 9.5 μ Ci, Amersham, 1980 respectively 1973.
- Large metal objects, possibly from the same system as the abovementioned canister. Some of them give count rates up to 4x background, a few contain remains of yellow cake.
- A lid was found with a radioactive sign on it (no barrel attached). No activity.
- The lid from a large box, formerly containing industrial sources, was discovered in a village. The box had contained Cs-137, Am-241 and Be sources. According to witnesses, the contents of the box had been returned to the facility.

- Witnesses

Several interviews with people from the villages were conducted. Lots of inhabitants of Wadir (sp?), the village on the south side of the facility, have taken radioactive waste barrels from the yellow cake storage plant located at the south side of the facility. Some emptied the barrels on the site and used them for storage of water and food. Others emptied them somewhere in the village. Families drank the water from unclean barrels and washed in it. One boy said he took a bite from the yellow powder, because he was curious.

Witnesses also told us that the US army came to the village to take the looted barrels and clean up the dumped yellow cake. They offered \$3 for each returned barrel. Many families have more use for a barrel (worth \$12) than for \$3, so not all the barrels were returned. They also say to be afraid of the US army.

Several stories were heard regarding unexplained illnesses, often from family members that came in direct contact with yellow cake. Tiredness, diarrhoea and nose bleeds are reported frequently.

One of the unidentified experts that came to the school said that he had found seven industrial radioactive sources under the bed of a young boy. The boy had been playing with the metal pieces everyday, and was now ill.

Ends