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# THE UKRAINIAN WEEKLY

Published by the Ukrainian National Association Inc., a fraternal non-profit association

Vol. LXIV

No. 16

THE UKRAINIAN WEEKLY SUNDAY, APRIL 21, 1996

\$1.25/\$2 in Ukraine

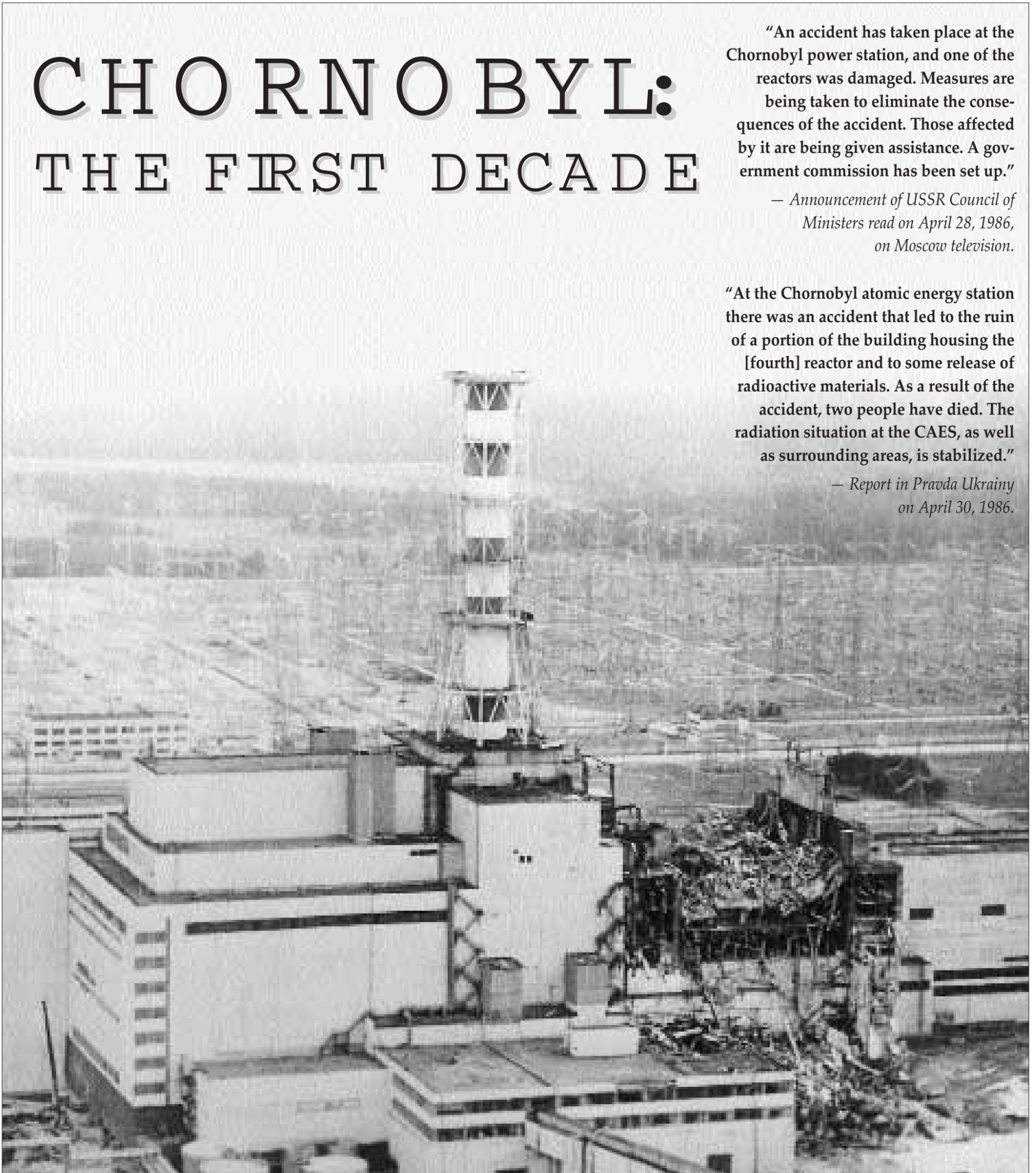
## CHORNOBYL: THE FIRST DECADE

“An accident has taken place at the Chornobyl power station, and one of the reactors was damaged. Measures are being taken to eliminate the consequences of the accident. Those affected by it are being given assistance. A government commission has been set up.”

— *Announcement of USSR Council of Ministers read on April 28, 1986, on Moscow television.*

“At the Chornobyl atomic energy station there was an accident that led to the ruin of a portion of the building housing the [fourth] reactor and to some release of radioactive materials. As a result of the accident, two people have died. The radiation situation at the CAES, as well as surrounding areas, is stabilized.”

— *Report in Pravda Ukrainy on April 30, 1986.*



The destroyed fourth reactor of the Chornobyl nuclear power plant as photographed soon after the April 26, 1986, disaster by Andrey Illesh.

## NATO secretary-general visits Kyiv; offers no new commitments to Ukraine

by **Marta Kolomayets**  
Kyiv Press Bureau

KYIV — NATO Secretary-General Javier Solana Madariaga lauded cooperation between the alliance and Ukraine, emphasizing the important role Ukraine plays in the stability of Europe, but offering no major new commitments to this new independent state, just south of expansive Russia.

"NATO attaches great importance to the independence and sovereignty of Ukraine. Your country has played an important role in the stability and security on the continent of Europe," said the NATO chief during a news conference on April 15.

Mr. Solana, who arrived in Kyiv that morning for a one-day visit, is the first NATO chief to visit Ukraine. During a packed day of meetings with President Leonid Kuchma, Prime Minister Yevhen Marchuk, Defense Minister Valeriy Shmarov, Foreign Minister Hennadiy Udovenko and members of the Ukrainian Parliament, Mr. Solana spoke of an "enhanced relationship" between NATO and Ukraine.

But the term "enhanced relationship" was not defined, nor were any documents signed between the alliance and Ukraine during Mr. Solana's visit, which the NATO chief called "very fruitful."

He said that his conversation with President Kuchma was "very frank, very sincere and very fruitful," but did not divulge any details, adding only that the

special relationship with Ukraine "has opened all kinds of possibilities and we will explore it."

Later, at a news conference with Foreign Minister Udovenko, he told reporters that the special partnership with Ukraine was forged back in September, when a "16 plus one" relationship was clinched in Brussels, which allows the two sides to discuss various security issues. (There are 16 NATO member-states; the one refers to Ukraine.)

Foreign Minister Udovenko emphasized that the special relationship of which Mr. Solana spoke includes Ukraine's active participation in the Partnership for Peace program, its cooperation in the Council of NATO cooperation, its commitment to peacekeeping with the IFOR troops in Bosnia, as well as official visits between NATO and Ukraine, such as Mr. Solana's one-day trip to Kyiv.

He also noted that the two sides had signed documents last year which emphasize a deepening of relations in many fields, including scientific-technical research, economic, military and ecological cooperation.

However, Mr. Udovenko, like all of the officials Mr. Solana met with in Kyiv, emphasized Ukraine's non-aligned status, as proclaimed in Ukraine's 1990 Declaration of State Sovereignty and reaffirmed in the 1991 Proclamation of Independence.

"Ukraine intends to move toward

(Continued on page 21)

## ANALYSIS: The new union signed by Russia and Belarus

by **David R. Marples**

On April 2 in Moscow, Belarus and Russia signed a "Treaty on Forming a Union of Sovereign Republics."

The signing of the treaty, from the Belarusian perspective marks perhaps the climax of a long campaign by Russophile elements to draw closer to Belarus's eastern neighbor.

Belarus was a founding member of the Commonwealth of Independent States (CIS); in fact, it hosted the December 1991 meeting of Slavic states at which the CIS was formed in December 1991.

Under the premiership of Vyachaslau Kebich in the spring of 1993, a powerful lobby of Communists in Parliament introduced the concept of a military and security union with Russia, a motion that was accepted over the angry opposition of the speaker, Stanislau Shushkevich, the Belarusian Popular Front and other opposition deputies.

In February 1995, Belarus signed a detailed Treaty of Friendship and Cooperation with Russia; a title ominously similar to that signed by the Soviet Union with client states (such as Afghanistan) during the Brezhnev period. The signing of the treaty followed a failure to achieve a currency union between the two states. It signaled Belarus's inability to alleviate a rising debt for the import of energy supplies — principally oil and gas — from Russia.

The current agreement is a much more radical document, and can be perceived as the latest in a series of high-handed maneuvers by President Alyaksandr Lukashenka in violation of the existing Constitution. Recently he has taken steps to consolidate

his authority over opposition groups and mildly independent media centers. On April 2, however, he effectively signaled the death knell of the young independent state.

The union is not a treaty between equal partners. Rather it signifies the subjugation of a small struggling nation to a larger and powerful state. That Mr. Lukashenka will play a prominent role in the new supra-national organization does not conceal the fact that policy will effectively be decided in Moscow. The stipulations publicized appear remarkably similar to the sort of role that Mikhail Gorbachev envisioned for union republics in his unsuccessful attempt to form a revised union in the spring and summer of 1991.

The treaty has created a Supreme Council (Soviet) as the major organization, which is to be composed of the highest officials of each state. President Lukashenka is to be chairman of this body for a two-year period, while Russian Prime Minister Viktor Chernomyrdin will head an Executive Committee. The third body is a parliamentary assembly. The supra-national organizations will elaborate a common foreign and military policy.

Moreover, the two sides have stated their intention in the 26 articles of the agreement to coordinate both economic policy and economic reform. Taxation, energy, ownership of property and agriculture are all to be developed according to a joint pattern. Indeed the currency issue appears to be the only sphere of the economy not yet subject to a unified policy, and even this aspect, it is envisaged, will be coordinated in the foreseeable future.

The Executive Committee will, in practice, be the most active working group, and on the Belarusian side, Mr. Lukashenka's close associate, Deputy Prime Minister

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## NEWSBRIEFS

### Belarus poll shows support for union

MIENSK — A majority of local residents voiced varying degrees of support for the recently concluded treaty on creation of a Union of Sovereign Republics, Belapan reported on April 15. The poll, conducted by the Zerkadlo sociological service, surveyed 300 people. Of these, 47 percent said they completely supported the community's formation; 16 percent voiced partial support; 17 percent were in complete opposition; and a further 20 percent found the question too difficult to answer. When asked about the effect the community would have on Belarus' sovereignty, 30 percent responded it would be strengthened; 28 percent said it would be lost; 16 percent felt it would make no difference; and 26 percent said they did not know. (OMRI Daily Digest)

### Belarus Parliament factions split on treaty

MIENSK — Three of the five Belarusian parliamentary factions — the Communists, the Agrarians and the pro-presidential Accord group — have approved the Russian-Belarusian integration treaty, Belarusian Television reported on April 10. The three factions voiced support for Belarusian President Alyaksandr Lukashenka's policies and urged the Parliament's speedy ratification of the treaty. The two other parliamentary factions — the Social Democrats and Civic Action — are unlikely to be as supportive, since their leaderships have criticized Mr. Lukashenka's pro-Russian policies. In related news, the executive committee of the Russian-Belarusian Community met for the first time in Moscow on April 11. Among the first directives issued by the group, chaired by Russian Prime Minister Viktor Chernomyrdin, were the granting of

equal rights to education and medical care of citizens of both states on the other's territory. (OMRI Daily Digest).

### Indonesia may be Ukraine's launch pad

JAKARTA — Ukrainian President Leonid Kuchma and Indonesian President Suharto have discussed the possibility of Ukraine launching a communications satellite from an Indonesian site, Agence France Presse reported on April 11. The satellite would help resolve Indonesia's communications problems among its thousands of islands. Mr. Kuchma told Mr. Suharto that Ukraine could launch the satellite with its rockets, but would be unable to finance the project owing to its economic difficulties. Mr. Kuchma is in Indonesia to try to increase trade and economic cooperation between Ukraine and the Far East. (OMRI Daily Digest)

### March inflation rate hits new low

KYIV — The monthly inflation rate in Ukraine for March was 3 percent, said the Ministry of Statistics in a report released on April 12. This is the lowest figure since the beginning of the year and one of the lowest in recent months. (Respublika)

### Fourteenth certificate auction sets record

ZAPORIZHZHIA — More than 60,000 privatization certificates were invested into local industry by private citizens and financial institutions during the recently held privatization auction, reported the oblast's center for certificate auctions on April 12. This is the largest number of certificates invested at a single auction here. For the first time ever, long lines formed at the center's doors, primarily due to the initial share

(Continued on page 21)

## Radionuclides seeping into drinking

KYIV — The Dnipro River basin, which supplies two-thirds of Ukraine's 52 million people with daily drinking water, is being markedly affected by particles of plutonium, cesium and strontium seeping into the water table from contaminated soil near the site of the Chernobyl nuclear accident, the Associated Press reported on April 3.

The wetlands and marshes of the Prypiat River, the largest right-bank Dnipro tributary, have absorbed large amounts of plutonium and other radioactive elements over the past decade, said the report. And, although expelled in lesser quantities than the other elements, the plutonium, with a

half-life of 25,000 years, poses the most long-lasting hazard.

According to Greenpeace Ukraine member Hanna Tsvetkova, a nuclear specialist, "The migration of radionuclides out of the [30 - kilometer 'dead'] zone is the most complex and burning issue" in dealing with Chernobyl-related contamination.

The AP report also explained that the past winter's heavier than normal snowfalls and resultant severe spring floods are causing significant amounts of radionuclides to travel far past the areas originally contaminated by plutonium, cesium, strontium and other radioactive elements.

## THE UKRAINIAN WEEKLY

FOUNDED 1933

An English-language newspaper published by the Ukrainian National Association Inc., a non-profit association, at 30 Montgomery St., Jersey City, NJ 07302.

Yearly subscription rate: \$60; for UNA members — \$40.

Second-class postage paid at Jersey City, NJ 07302.

(ISSN — 0273-9348)

Also published by the UNA: Svoboda, a Ukrainian-language daily newspaper (annual subscription fee: \$100; \$75 for UNA members).

The Weekly and Svoboda:  
(201) 434-0237, -0807, -3036

UNA:  
(201) 451-2200

Postmaster, send address changes to:  
The Ukrainian Weekly  
P.O. Box 346  
Jersey City, NJ 07303

Editor-in-chief: **Roma Hadzewycz**  
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The Ukrainian Weekly, April 21, 1996, No. 16, Vol. LXIV

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## CHORNOBYL: THE FIRST DECADE

### EDITORIAL: Chernobyl continues

Ten years ago, when the fourth reactor at the Chernobyl nuclear power plant in the Ukrainian SSR exploded, spewing radiation into the atmosphere, the Soviet Union kept silent. True, the Kremlin leadership set up a government commission within 12 hours after the explosion. But, it did not begin evacuating the residents of Prypiat, the nuclear station's "company town," until 36 hours later; and it did not make any public statement about the accident until 48 hours later. That announcement told the Soviet citizenry and the world precious little. (Its text appears on the front page of this issue.) Due to the information vacuum, news stories had to rely on unofficial sources whose reports could not be confirmed.

The Soviet deception had begun.

May Day celebrations in Kyiv went ahead as planned, and Soviet television showed faces of smiling children marching down the Kleshchatyk. Journalists, meanwhile, were not allowed to travel to Kyiv; that was allowed only three weeks later and then only to the towns where the first evacuees had been resettled. The USSR declined offers of international assistance. A small delegation of Ukrainian Americans, escorted by Rep. Benjamin Gilman of New York, called on the Soviet and Ukrainian SSR missions to the United Nations in hopes of learning more about the disaster and finding out how our community here could help. Their efforts, too were rebuffed. Everything is under control, said the Soviet regime's spokesmen.

And the deception continued.

On May 14, Mikhail Gorbachev, general secretary of the Communist Party of the Soviet Union, architect of perestroika and glasnost, uttered his first words about the Chernobyl tragedy — 18 days after the accident. He reported nine dead and 299 hospitalized with radiation sickness. Meanwhile, the secret minutes of the Politburo's Chernobyl working group indicate that thousands were hospitalized at that very moment.

The USSR had failed its first true test of glasnost, reverting completely to its well-honed policy of deception.

In August of that year, at the Vienna meeting of the International Atomic Energy Agency, the Soviets reported that 50 million curies of radiation had been released by the Chernobyl accident. Updated research has now shown that the amount of radiation released by Chernobyl is between 150 million and 200 million curies. (The Three Mile Island accident in the U.S. released a mere 15 curies.)

The deception was continuing — and it was succeeding.

In the succeeding years, the truth slowly began to leak out about Chernobyl and its consequences, and the populace became increasingly more disillusioned with Soviet lies. A Green movement arose in Ukraine, and the first anti-nuclear protests took place in 1988. New political groups began to make their voices heard; soon, the issue became independence — for in an independent Ukraine, the people would have their say, they would determine their own future. Chernobyl, thus, was the beginning of the end of Soviet power. In 1990 on July 16, the newly elected Parliament voted to declare Ukraine's state sovereignty and to proclaim the three non-nuclear principles. Just two weeks later, it voted to close down Chernobyl by 1995 and to work out a program to eliminate all nuclear plants from Ukraine. In 1991 — the year it became independent — Ukraine adopted a moratorium on the construction of any more reactors.

Thus, Ukraine showed its resolve to be rid of nukes. But, energy realities soon intervened. With Russia pressuring the newly independent state and cheap oil and gas suddenly in short supply, Ukraine was compelled to rethink its position about closing down its nuclear plants. The money was simply not there, and the country sorely needed energy. Winter of 1993 saw many of Ukraine's streets and buildings darkened, transportation running irregularly and brown-outs for several hours a day in areas outside of Kyiv.

The energy crunch continues to this day, and Ukraine continues to look to the world for support in its wise decision to shut down Chernobyl, re-seal the stricken fourth reactor and seek out alternate sources of energy. There is much hope that the G-7 meeting in Moscow on April 19-20 will honor its previous pledges and make new commitments to help Ukraine out of its nuclear morass.

Meanwhile, Chernobyl's horrific effects — medical, psychological, environmental, social, etc. — continue. As shown on the pages of this special anniversary issue, there is no agreement by various authorities, researchers and specialists on the quantitative effects of Chernobyl. But there is agreement that the effects are there, touching the everyday lives of people in Ukraine and Belarus and parts of Russia — and that Chernobyl will be with us for many more decades to come.

As Ukrainian Member of Parliament Volodymyr Yavorivsky said at Columbia University last week: "The Chernobyl disaster is a catastrophe of the 21st century, not the 20th. ... Humanity does not comprehend its scale. ... The real disaster is only beginning."



May 5, 1986, demonstration near the United Nations.

### Human costs of Chernobyl disaster

Following are excerpts of *The Ukrainian Weekly's* first editorial on the Chernobyl nuclear accident. It was published on May 4, 1986.

The figures are astounding. It is believed that up to 15,000 are dead and buried, that the hospitals in Kyiv are filled with thousands of bloodied and bandaged people, and the situation is becoming increasingly volatile.

TEN  
YEARS  
AGO

The nuclear disaster at Chernobyl, a town 60 miles north of Kyiv, has set off unprecedented world reaction. It is already labeled the worst nuclear disaster in history, and the Soviets are being accused of obfuscation. The world community, both expectant and fearful, is scrambling for any bit of information that will help shed any ray of light on what exactly happened at Chernobyl.

In the past several days, much has been said in the international media about the implications of the disaster on the world nuclear community, of its future, sparking debates between proponents and opponents of this form of energy, especially in the U.S. And it has raised questions as to the sincerity and, indeed, the reliability, of the Soviet Union as a potential ally when it comes to the nuclear arms race.

Chernobyl has outraged the world, and people everywhere demand that the USSR open its doors and let the world see what has happened.

But lost among all these facts and figures, and constant speculations is the human factor — what long-term effect this accident will have on the people of Ukraine, Poland, the Scandinavian countries, Europe.

In concrete terms, what effect will the nuclear fallout have on these people? Which is the Soviet government more worried about: its citizens or its reputation?

What we have found most reprehensible in the past week is the actions taken (or not taken) by the Soviet leadership. The Soviet Union failed in its international obligation to let its own people know what happened. And, because of this, people will be affected for generations to come.

When the reactor blew at Chernobyl, the Soviets said nothing. Not until the Swedish authorities measured unusually high levels of radiation in their nuclear plant did the USSR come forth with a four-sentence announcement via TASS there had been an accident. And even then the Soviets said that there is nothing to worry about. Not so, said the Swedes and other radiation experts. ...

While their neighbors in Poland receive iodine pills to offset the effects of radiation from a cloud going their way, the Ukrainian people walk the streets, as if nothing had happened. Why hasn't the Soviet government warned its citizens: ...

At the 27th Party Congress in February, General Secretary Mikhail Gorbachev said he wanted to build a more open society ...

Well, Mr. Gorbachev, you have failed. Your reminders will be those babies in generations to come whose mothers you failed to warn. In March, your colleague, Andrei Gromyko, then foreign minister, said the West was watching, "just waiting for some sort of crack to appear in the Soviet leadership."

The crack has appeared.

#### THE WHITE HOUSE

WASHINGTON

March 26, 1996

Warm greetings to all those across the United States, in Ukraine, Belarus, Russia and around the world who are commemorating the tenth anniversary of the Chernobyl nuclear disaster.

The devastating effects of the 1986 explosion and fire at the Chernobyl Nuclear Power Plant are with us still. Dozens of people were killed almost immediately; thousands were stricken with acute radiation sickness. Radiation contaminated large areas of what are now Ukraine, Belarus, and the Russian Federation, reaching even the Baltics, Scandinavia, and beyond. Thousands risked — and many lost — their lives in the cleanup efforts, and in the years since, terrible cancers have claimed even more victims, many of them children.

I commend the noble work of the humanitarian relief organizations and the courageous individuals who have cared for the innocent victims of this calamity. In striving to save and protect the children of Chernobyl and their elders, they have responded to one of the world's worst environmental catastrophes with the best effort that the world has to offer. Their advice and initiative have led to constructive U.S. Government programs to supply medicines and treatment for those who continue to suffer. And their compassionate work has earned our lasting admiration and gratitude.

But we know that relief and sustained medical care are not enough. The United States will continue to lead international efforts to prevent another such disaster. Late last year, we joined with Ukraine and the other G-7 nations in a Memorandum of Understanding to close the Chernobyl plant by the year 2000. Through this Memorandum, our countries entered into a partnership to mobilize the resources not just to close Chernobyl, but also to help Ukraine develop a more vibrant, self-sustaining energy sector that will advance its prosperity as a sovereign nation in the new Europe. And on April 19 and 20, world leaders will meet in Moscow to recommit themselves to a global mandate for nuclear safety and security. This is a goal of the highest order — for we must not rest until Chernobyl is remembered not only as a tragedy, but also as a signpost on the road to a safer world.

As we mourn those who lost their lives at Chernobyl and pray for those who still suffer its effects, let us renew our solemn pledge: to promote healing, ensure prevention, and offer hope.

Bill Clinton

## CHORNOBYL: THE FIRST DECADE

### The facts about the aftermath

by David R. Marples

The disaster at Chernobyl on April 26, 1986, contaminated an area of about 100,000 square miles. This area encompassed about 20 percent of the territory of Belarus; about 8 percent of Ukraine; and about .5 to 1 percent of the Russian Federation. Altogether the area is approximately the size of the state of Kentucky, or of Scotland and Northern Ireland combined. The most serious radioactive elements to be disseminated by the accident were iodine-131, cesium-137 and strontium-90.

Ten years after the event, Chernobyl remains shrouded in controversy as to its immediate and long-term effects. The initial explosion and graphite fire killed 31 operators, firemen and first-aid workers, and saw several thousand hospitalized. Over the summer of 1986 and in the period 1986-1990 it also caused high casualties among clean-up workers. According to recent statistics from the Ukrainian government, over 5,700 "liquidators" have died – the majority young men in their 20s. A figure of 125,000 deaths issued by Ukraine's Ministry of Health appears to include all subsequent deaths, natural or otherwise, of those living in the contaminated zone of Ukraine.

According to specialists from the World Health Organization, the only discernible health impact of the high levels of radiation in the affected territories has been the dramatic rise in thyroid gland cancer among children. The comment appears unwarranted in light of regional research. In Belarus, for example, a study of 1994 noted that congenital defects in the areas with a cesium content of the soil of 1-5 curies per square kilometer have doubled since 1986, while in areas with over 15 curies, the rise has been more than eightfold.

Among liquidators, and especially among evacuees, studies have demonstrated a discernible and alarming rise in morbidity since Chernobyl when compared to the general level among the population. This applies particularly to circulatory and digestive diseases, and to respiratory problems. Less certain is the concept referred to as "Chernobyl AIDS," the rise of which may reflect more

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attention to medical problems, better access to health care, or psychological fears and tension among the population living in contaminated zones. Increases in the incidence of children's diabetes and anemia are evident, and again appear much higher in irradiated zones. The connection between these problems and the rise in radiation content of the soil have yet to be determined.

To date, the rates of leukemia and lymphoma – though they have risen since the accident – remain within the European average, though in the upper 75th percentile. One difficulty here is the unreliability or sheer lack of reporting in the 1970s. The induction period for leukemia is four to 15 years, thus it appears premature to state, as have some authorities, that Chernobyl will not result in higher rates of leukemia.

As for thyroid cancer, its development has been sudden and rapid. Today about 1,000 children in Belarus and Ukraine have contracted the disease, and it has yet to reach its peak. One WHO specialist has estimated that the illness may affect one child in 10 living in the irradiated zones in the summer of 1986, hence ultimate totals could reach as high as 10,000. Though the mortality rate from this form of cancer among children is only about 10 percent, this still indicates a further 1,000 deaths in the future. Moreover, this form of cancer is highly aggressive and metastasizes rapidly if not operated upon. The correlation between thyroid gland cancer and radioactive fallout appears clear and is not negated by any medical authority today.

Turning to the question of the Chernobyl reactor itself, it continues to pose enormous problems for newly independent Ukraine and for the nuclear industry in general. In the spring of 1994, eight years after Chernobyl disaster, the IAEA belatedly declared the reactor unsafe. Pressure from the Group of Seven has forced Ukraine to agree to the closure of the station by the year 2000, but Ukraine's price tag – some \$4.4 million to shut down Chernobyl and to construct a new thermal power station in the vicinity – has been offset by only about 50 percent from G-7 subsidies and loans.

Both the current director of the Chernobyl plant, Serhiy Parashyn, and former director Mykhail Umanets have vocalized their view that the station's lifespan is only 50 percent complete and that Chernobyl today is safer than other Soviet-made RBMK (graphite-moderated) reactors at Ignalina, Lithuania (an RBMK-1500); and the Russian stations of Sosnovyi Bor (near St.

Petersburg), Kursk and Smolensk.

Both Ukraine and Belarus face significant energy crises and have been reliant on expensive imports of oil and gas from Russia and Turkmenistan. Both have turned back to the nuclear option. Yet the industry remains short of skilled personnel, adequate and well-paid safety regulators, and reliable reactor units. Several potentially serious mishaps have occurred in Ukraine, including two recent accidents that involved leakages of radiation at Zaporizhzhia-4 (April 1995) and Chernobyl-1 (November 1995, now acknowledged to have been a more serious Class 3 accident on the international scale rather than Class 1 as initially reported).

In addition to such a serious dilemma, the funding of a new sarcophagus over the destroyed reactor has not been determined. The current structure, which covers some 20 tons of radioactive fuel and dust, is cracking and is not anticipated to last more than a further 10 to 15 years. Though plans have been formulated to re-cover the original concrete shell, the financial backing for such a structure is problematic. Moreover, the present plan will likely entail the permanent closure of Chernobyl-3 and as such is regarded with skepticism by those of Ukraine's energy sphere who wish to continue reliance upon nuclear power.

It is fair to say that the dangers presented by former Soviet nuclear power stations today exceed those of one decade ago. In the meantime, some 3.5 million people live in contaminated zones. Even evacuees are known to be dissatisfied with their new homes. From a necessary panacea, evacuation of those living in zones with high soil contamination, today has become an unpopular and slow-moving process.

Finally, the lack of consensus on the effects of the Chernobyl disaster helps no one. It does not help the economically floundering governments of Ukraine and Belarus; and it places a serious impediment on the work of charitable and humanitarian organizations. And, the one-sided statements to the effect that morbidity and diseases may have causes other than Chernobyl, or that they are caused by "radiophobia," detract from the prime need, which is to provide aid for a population facing an acute health crisis with inadequate resources.

Ultimately, it will be seen that Chernobyl has compounded a health crisis of extraordinary dimensions. Thyroid gland cancer is proof of the relationship between the 1986 nuclear disaster and dilemmas faced today by Belarus and Ukraine.

## NUCLEAR DISASTER IN UKRAINE: Up to 15,000 feared dead

*Reprinted below is The Weekly's first news story about the nuclear accident at the Chernobyl power plant in Ukraine. It appeared in the May 4, 1986, issue.*

JERSEY CITY, N.J. – Up to 15,000 are feared dead in what many Western experts are calling the worst nuclear accident in history. The accident occurred at the Chernobyl nuclear power plant, located near the town of Prypiat, some 60 miles north of Kyiv, capital of Ukraine. Reports of the accident were first released on April 28.

This figure of 15,000 is based on unconfirmed reports from Ukraine. The reports also state that the dead were buried at a nuclear waste disposal site.

(A member of the intelligence community who is familiar with this type of nuclear installation said the figure of 15,000 deaths is conceivable.)

This and other information was transmitted to Svoboda and The Ukrainian Weekly by Ukrainian Americans in the Northeast and Midwest who have relatives in Ukraine whom they managed to contact via telephone. The relatives spoke on condition that their names not be used.

Reports from residents of Kyiv indicate that there are some 10,000 to 15,000 casualties. Thousands of bandaged and bloody persons have been brought to the city's hospitals, and the hospitals are packed with the wounded.

Earlier reports carried by United Press International said that a resident of Kyiv revealed deaths had surpassed the 2,000 mark, and that 10,000 to 15,000 persons were evacuated from Prypiat. This woman, too, had said the dead were buried at a radioactive waste site, reportedly in either the village of Pyrohivtsi or Pyrohove, southwest of the accident site.

Residents of three other settlements near the power plant also were evacuated.

Meanwhile, from Lviv, western Ukraine, another relative learned the people have not been told the extent of the nuclear accident, although they do know that one

has occurred. Soviet authorities have not told the residents of Lviv about any safety precautions they should be taking, such as not eating fresh produce, not drinking the water, staying indoors, or taking iodine tablets.

This is in marked contrast to the situation in Poland, where children and pregnant women were given iodine in liquid or tablet form, and told not to drink milk from grass-fed cows or eat fresh produce.

The BBC reported that an area approximately 18 miles around the Chernobyl plant has been proclaimed a security zone. Western news media were barred from Kyiv and the area near the nuclear plant.

As of May 1, the West was reporting that the newest of four 1,000-megawatt reactors at Chernobyl had experienced a meltdown and a second reactor was threatened, and that a graphite fire was continuing to spew radioactivity into the air.

Official Soviet sources, however, were saying that the fire was under control and that radiation levels were decreasing. Soviet authorities also said that only two persons had died as a result of the accident and that 197 were injured, 18 of them critically.

The USSR declined to accept aid from the United States or the International Red Cross.

The original Soviet announcement that a nuclear accident had occurred at Chernobyl came in a terse, four-sentence announcement disseminated on April 28 by TASS. The announcement came only after authorities in Sweden had detected abnormally high levels of radioactivity in their country.

European governments condemned Soviet authorities for not immediately announcing the accident and for not being forthright with information about the extent of the disaster.

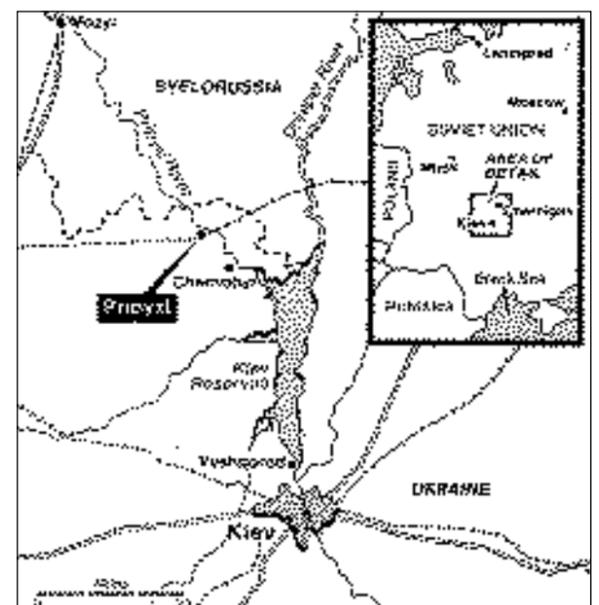
Ukrainians in the United States and Canada who tried to phone relatives in Ukraine were in many cases told that the phone lines were down.

The Kobasniuk Travel Agency canceled two tours to Ukraine that were supposed to have been in Kyiv on

May 14, Easter Sunday according to the Julian calendar. Other tours were put on hold for an indefinite period, as the U.S. government cautioned Americans not to travel to the Ukrainian capital.

As of May 1, when it became apparent that the winds were shifting and the radioactive cloud from the Chernobyl nuclear power plant was headed toward southern and western Ukraine, experts feared that the crop-growing area of Ukraine would be destroyed for years to come.

Meanwhile, many Ukrainian Americans expressed concern that the full effects of the nuclear catastrophe at Chernobyl would become known only years later; that it would take years to ascertain the long-term effects on the land, water and people. Moreover, there was fear that large areas around the nuclear site would be uninhabitable for decades.



*The New York Times published this map in its April 30, 1986, issue.*

TEN  
YEARS  
AGO

## CHORNOBYL: THE FIRST DECADE

# Interview: Antony Froggatt, Greenpeace representative in Ukraine

*Greenpeace International, the worldwide activist environmental group located in Amsterdam, has been in Ukraine since 1990, when it initiated a medical project to diagnose and treat children who suffered from the fallout of the Chernobyl explosion. Since 1993 Greenpeace Ukraine has existed as an independent public environmental organization and as a national office of Greenpeace International.*

*Today Greenpeace Ukraine has a two-pronged agenda: (1) to push for alternative energy sources and the shutdown of RBMK reactors and deal effectively with the aftereffects of Chernobyl; and (2) to focus attention on the extensive toxic pollution in Ukraine, including chemical, air and water pollution, and how to reduce it.*

*The Kyiv office has 14 staffers and an organized support structure of volunteers throughout the country. Its 1995 budget was \$200,000.*

*The Weekly interviewed Antony Froggatt, the representative of Greenpeace International for the former Soviet Union and Central and Western Europe, on April 9 while he was in Kyiv. Mr. Froggatt, 29, graduated from Westminster University in London with a degree in ecology. The following edited interview was conducted by Staff Editor Roman Woronowycz.*

### What are the ramifications 10 years after the Chernobyl reactor exploded.

There are a huge number. First of all, look at the area of land contaminated. The United Nations Department of Humanitarian Affairs estimates that 160,000 square kilometers is still contaminated, that is in the three republics, Belarus, Ukraine and Russia. Within that, somewhere between 6 and 9 million people still live in the contaminated area.

According to the World Health Organization, about 270,000 live in areas where they should be evacuated, the levels of contamination are just so high.

Between 400,000 and 500,000 people were evacuated in total. As far away as the United Kingdom there are still restrictions on agricultural practices. It is truly a continental disaster.

### In what way are there restrictions in the U.K.?

Restrictions, basically, are on the sale of meat in sheep. The sheep have to be brought to different, lower areas of land [from where they have historically grazed] to allow the radioactivity to decrease.

### Are the animals tested for radioactive levels?

Yes, officials know which farms have restrictions placed upon them. In January 1996, there were still 219 farms with restrictions.

### Are these farmers being compensated for this by the British government?

The total British compensation has to date been \$18 million. Germany has paid out \$307 million because of the accident, in Austria — \$94 million. This is a good example of the truly global nature of the accident.

Then, in terms of the health impact: For a long time, for five or six years after the accident, the international community was saying that you are unlikely to see any significant health impacts. The World Health Organization even today is saying that only 30 or so people died as a result of the accident. But in 1992-1993 [Ukraine] started to see an increase in thyroid cancers among children.

Today in Belarus, there is a 100-fold increase in the country as a whole of thyroid cancer among children. In the highly contaminated areas of Homiel, there is a 200 times increase.

The thing that makes this important is the children that are affected, but also, many health and radiation experts say that this one is the indicator; [thyroid cancer] is the first disease you would expect to see within the larger population.

Then you have the question about what other health impacts you might see. This week there was a conference going on in Vienna organized by the International Atomic Energy Agency in which they are discussing this sort of issue. At the moment, unfortunately, organizations like them and others are saying that thyroid cancer is the only disease that we can see at the present time. This is contradicted by a number of people, by the World Health Organization in fact.

### Is there any documentation that physical mutations have occurred, animals born with five legs, two heads?

There were many pictures that came out in the early



Roman Woronowycz

A symbolic replica of the Chernobyl sarcophagus built by Greenpeace on St. Sofia Square during eighth anniversary.

nineties. As to how much of this could be directly related to the accident and how much was in the natural population but just noticed more has never really been investigated to a sufficient degree.

This is one of the problems regarding that; the other is the synergistic effects, because there is also other heavy environmental damage that exists, heavy metal, pesticides, etc.

One of the real problems that exists is the longevity of the radionuclides. Most of the contamination that you see today is of cesium-137. Basically, it has a half-life of 30 years, so the levels of contamination we see today will be around for generations, there will be only a slow reduction.

There is, of course, plutonium, which has a half-life of 24,000 years, but the quantities dispersed were much smaller.

### What does Greenpeace think is important to emphasize, to put on the public agenda in terms of Chernobyl and its aftereffects?

There are two basic points. First and foremost, the Chernobyl station is still operating. Units 1 and 3 are still generating electricity. This clearly has to stop. The reactors themselves have serious design flaws. On top of that, you have aging components, a lack of regulatory regimes, all of which, in the words of the U.S. Department of Energy, make these probably more dangerous than in 1986. Clearly these reactors need to be shut down.

Secondly, the sarcophagus, the structure around Unit 4, is collapsing. It was built under extreme conditions between May and November 1986. It was supposed to last 30 years. People say it will be lucky if it lasts another 10.

Two things need to happen. One is there needs to be urgent work to shore the thing up. Secondly, and this is in the more medium-term, they need to replace it, however this is going to be very expensive. Estimates undertaken for the European Commission say it will cost around \$1.5 billion.

Ukraine does not have that type of resources. Western taxpayers, basically, are going to have to pay. This is the price we all have to pay for the nuclear industry.

On top of that you have measures that are needed in terms of trying to reduce the dose that individual people have absorbed, trying to assist them in getting cleaner food. If there needs to be more relocation, then Western financing will have to assist them.

### Why is Chernobyl not higher on the public agenda?

From the U.S. perspective it is a very long way away. Not many people in the U.S. have an affinity with Ukraine or Russia.

It's probably not top of the list [in Europe], but peo-

ple are aware of it, in Germany and other places, places that received the contamination. It's always a reminder to them of what happened 10 years ago and that it could happen again; you were affected individually.

Obviously, however, it is not high enough on the political agenda for any real improvements to have taken place in the last 10 years, and I think that is the really sad thing; we haven't seen this design of reactor shut down, they can't be made significantly safer and the threat of another Chernobyl still exists.

### Why do politicians not seem to be acutely aware of the problems, or why do they seem to downplay them?

Countries that have nuclear power do not necessarily want to raise the specter of another accident, because it may well draw back to themselves the dangers of their own reactors.

A second thing is that it is very clear that within the politics of Russia MinAtom (the nuclear ministry) is very, very powerful. The person who heads it up, Viktor Mykhailov, was formerly head of the weapons program in Russia, he's very, very powerful. MinAtom, basically, will fight tooth and nail to keep any reactor operating. As you have seen with the sale of nuclear reactors to Iran, the U.S. tried very hard to stop that sale and was not successful.

So there is the very real political force of the Russian nuclear industry, and the Russian nuclear industry is also very much encouraging Ukraine's to keep operating Chernobyl. They do not want to see the West interfering in what they perceive as their backyard. This is a very difficult political situation.

### How about the IAEA (International Atomic Energy Agency)? Does Greenpeace think they have adequately addressed the problems of Chernobyl?

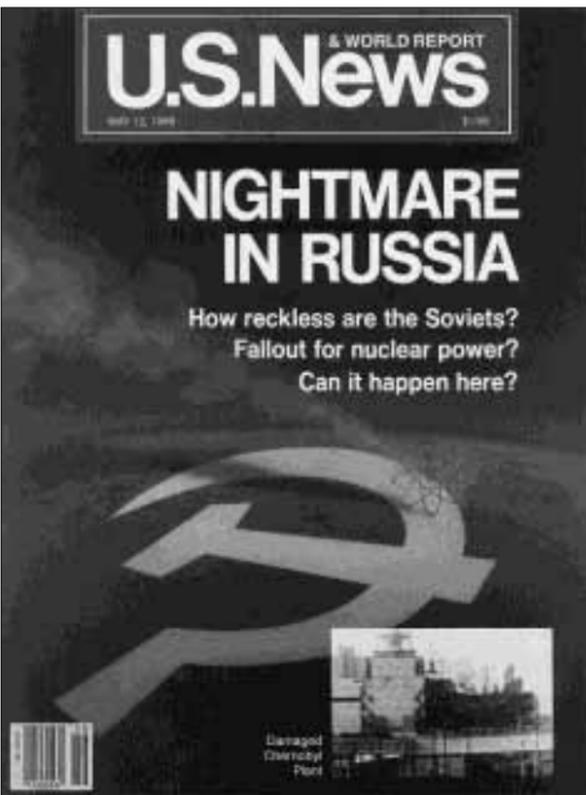
If you look at their record, it doesn't stand up, really. First of all, they organized a conference in the second half of 1986 to look at the causes of Chernobyl and, basically, they took the Soviet line all the way and said that it was operator error rather than design error.

Their defense could be that this was all the material [available] to them, but I just don't agree. I think that their recommendations and their conclusions from that study were used against the operators who were subsequently sent to prison. They should not have been so naive, if naive is the right word, to believe what they were told about how good the design of the RBMK was. Even prior to 1986 they had articles published by the international atomic energy industry bulletin saying what good reactors RBMKs are. Clearly it isn't a good design.

Even today, just last week when the IAEA had a

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# CHORNOBYL: THE FIRST DECADE



The front-pages of the Daily News and New York Post, and the cover of U.S. News & World Report (erroneously placing Chernobyl in Russia), which carried the first news of the disaster.

## A glimpse of Soviet reality: the disaster's human factor

The article below was the first post-accident analysis published in *The Weekly*. It appeared on May 11, 1986.

by David R. Marples

The terse announcement by Radio Moscow (April 28) that there had been a nuclear accident at the Chernobyl atomic energy station in the Ukrainian SSR indicates a mishap of catastrophic proportions. In the past, the Soviet authorities have refused to acknowledge even the chance of an accident in the industry.

As recently as February 1986 Radio Kyiv was extolling the safety mechanisms at Chernobyl, commenting that the surrounding area was so pollution-free that the plant reservoir is even being used for fish breeding. It went on to note that after a quarter of a century of exploitation, "There has not been a single accident at a Soviet nuclear power plant."

The Chernobyl plant is located on the river Prypiat, about 130 kilometers north of the Ukrainian capital of Kyiv, a city of over 2 million persons. It is one of nine nuclear power plants either in operation or under construction in Ukraine, which is the center of nuclear energy in the European part of the USSR. Commissioned in 1971, the Chernobyl plant reached a capacity of 4,000 megawatts by the end of 1984, making it the largest plant in Ukraine, and one of the four largest in the Soviet Union.

Herein lies one problem. Since the construction of nuclear power plants in the USSR has traditionally fallen behind plan — "We are lagging behind by one year, like students who are behind in studying for their exams," declared a Soviet official this spring — efforts are being made to raise the tempo of construction by inducing workers to greater output, and even competition with other plants.

Two more reactors were scheduled at Chernobyl for the 1986-1990 period, but the first 1,000-megawatt block was supposed to be ready this year, or about 50 percent more quickly than the average time span between blocks officially advocated by the Soviet authorities. According to the Ukrainian newspaper *Radianska Ukraina*, (December 29, 1985), the Chernobyl plant was "leading the field" in the race to become the largest nuclear plant in the USSR.

The race to complete reactors forms part of the new Soviet plan to double the amount of nuclear-generated electricity in the USSR by 1990. In Ukraine the plan is for nuclear energy to account for 60 percent of electricity by the end of the century (it is currently around 12 percent). But the evidence suggests strongly that the industry is being pushed ahead before the creation of the necessary infrastructure.

In terms of technical personnel, for example, the Soviets have admitted that there is a gross shortage of specialists. The training of qualified cadres specifically for the nuclear energy industry is in its infancy. A faculty of nuclear energy — the first in the USSR — was created at the Odessa Polytechnical Institute only in 1975. A second was opened at Kyiv last year, along with the foundation of an Institute of Nuclear Energy at the Moscow Physical Engineering Institute. In short, only now are suitably qualified persons beginning to emerge in the industry.

It has also been a common practice in Ukraine and elsewhere to employ the services of students to help construct plants during the summer vacations. According to *Komsomolskoye Znamia* (the Ukrainian newspaper for Young Communists), in the summer of 1985 "bands of students" were working at the Odessa, Rivne, Chernobyl, South Ukraine and Zaporizhzhia nuclear power plants in Ukraine. At the same time, *Komsomol* youth brigades at Chernobyl were declared to be working at 150 percent of the normal rates at the end of 1985. These two factors indicate both the haste of the operations and the disregard for safety shown by the Soviets in a situation when the economy demands that the industry be stepped up.

In February, Radio Moscow criticized workers at the Odessa plant in Ukraine for their failure to keep pace with scheduled plans. On the following day, Radio Kyiv followed suit, this time declaring that the construction of the station at Rivne, in western Ukraine, was taking place "in an unstable fashion." But while pressure has been maintained, workers' needs have been ignored. Late in 1985, Ukrainian party chief Volodymyr Shcherbytsky visited the plant at Zaporizhzhia, pointing out not only that the plant

was short of equipment and had failed to recruit the necessary personnel, but also that the local authorities had failed to improve transport, medical and commercial services, and that there were no recreational facilities for workers.

In the event of the possible meltdown of the uranium graphite reactor at Chernobyl — and the strong probability of fatalities at the plant both directly and in the long-term through the effects of radiation — the question has to be raised as to why the Soviets have developed the industry with such speed and with so little concern for the human factor.

Two reasons suggest themselves. In the first place, the USSR is facing an energy crisis. Traditional coal reserves at the old European coalfield in Siberia have fallen behind schedule in addition to necessitating extortionate expenditure on transportation. Current problems in the oil industry have forced Mr. Gorbachev to rely to an increasing extent on nuclear energy as a reliable Soviet power source.

Second, the Ukrainian plants are also being constructed as part of a concerted plan to develop nuclear-generated electricity for the East European countries. For example, the plant being constructed at Khmelnytsky (western Ukraine) is to service Poland and Czecho-Slovakia; the South Ukrainian plant is being funded jointly with Romania and will serve both that country and Bulgaria. Evidently, the Chernobyl plant also was part of this integrated system to supply nuclear power to Eastern Europe. Ukraine's location on the Soviet western borderland renders it an ideal location for such "cooperation."

The Soviets have now paid the penalty for placing economic needs above safety factors. Despite their acclaimed safety record, a smaller accident was reported at the Rivne plant in 1981, but evidently had little impact on the authorities. Two nuclear heating plants under construction at Odessa and Kharkiv appear to be dangerously close to major population centers. And the size of the catastrophe at Chernobyl suggests that the city of Kyiv may be endangered, despite its relative distance from the scene. The accident has not only imperiled human life, however. It has put into question the entire 12th Five-Year Plan for 1986-1990.

The future of the industry in the USSR remains in some doubt.

## The ramifications of the Chernobyl catastrophe

The article below appeared in the May 4, 1986, issue of *The Weekly*.

JERSEY CITY, N.J. — "The nuclear disaster at Chernobyl has major implications and undermines the credibility of the Gorbachev regime."

That's how a noted expert on the Soviet Union assessed the political fallout from the accident at the Soviet nuclear power plant in Ukraine.

Prof. Bohdan Bociurkiw, a 1984-1985 fellow at the Woodrow Wilson International Center for Scholars and a professor of political science at Carleton University in Ottawa, said the credibility of the Gorbachev regime — both domestically and internationally — has been dealt a serious blow by last week's disaster.

Dr. Bociurkiw, during a telephone interview with *The Ukrainian Weekly* on May 1, pointed out that the extraordinary Soviet effort to restrict information about the nuclear accident flies in the face of promises of openness made by General Secretary Mikhail Gorbachev during the 27th Soviet Party Congress.

Mr. Gorbachev, in his keynote speech at the congress, said:

"Extensive, timely and frank information is evidence of trust in the people, respect for their intelligence and feelings and of their ability to understand events of one kind or another on their own."

Prof. Bociurkiw expects the relation between Moscow and its neighbors will sour because of its early silence about the accident. He added that the authorities in Poland likely received much more information about the effects of the nuclear disaster than officials in Ukraine.

The handling of the Chernobyl accident, Dr. Bociurkiw said, brings to mind the vague Soviet coverage of the 1965 earthquake disaster in the Uzbek capital of Tashkent, when TASS admitted to only four fatalities. In the days following the Tashkent disaster, Soviet citizens were shocked to discover that the number of

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## CHORNOBYL: THE FIRST DECADE

# Life in the zone: elderly returnees to Opachychi feel at home

by **Marta Kolomayets**  
Kyiv Press Bureau

OPACHYCHI, Ukraine – They meet in front of the old abandoned general store every Tuesday and Friday, come rain or shine. Each season their clothes grow more tattered, their shoulders slump a bit lower, and their pace becomes a tad slower.

They wait for the “store on wheels,” which comes in from the closest town outside the zone, Ivankiv, to deliver such staples as bread, butter and sugar, as well as the essentials for a Soviet-era diet: vodka, cigarettes and chocolates.

It’s been more than nine years since the 52 residents from Opachychi returned home, to the “zone of alienation” (as literally translated from Ukrainian), as the 30-kilometer zone around the Chernobyl nuclear plant is called.

And, although on May 4 it will be 10 years since buses came to evacuate them from their native lands, for most of the pensioners here memories of that day remain vivid. They were not told much as buses came to transport them to clean areas of Kyiv Oblast, but for seven days prior to their evacuation they witnessed convoys of buses passing via the dirtroad that serves as the main thoroughfare of their village – Soviet Street (Radianska Vulytsia) – taking somber-looking men, teary-eyed women, teenagers, boys and girls out of the towns of Prypiat and Chernobyl and neighboring villages.

On April 26, 1986, Ulana Makukha, 60, saw the sky light up through her kitchen window, but knew little about the effect that fire would have on the rest of her life. It was 1:23 a.m. when an explosion at the core of reactor No. 4 at the V.I. Lenin Atomic Power Station changed not only the world of the 400 residents of Opachychi, but also the lives of more than 92,000 evacuees from the 30-kilometer zone and millions of residents in Ukraine, Belarus and Russia.

[According to the CIS Committee of Statistics, more than 82,000 square kilometers of land in Ukraine, Belarus and Russia was contaminated as a result of the explosion. That translates into more than 8 percent of Ukraine’s territory, 22 percent of Belarus’ territory and 0.3 percent of Russia’s territory.]

A few days later, she, her husband, as well as her four children and her neighbors, were taken to the Makarivsky raion of Kyiv Oblast, 54 kilometers southwest of Kyiv, where they were resettled in apartments – two and three people to a nine-square-meter space (a little over 25 square feet).

Most of them spent the winter of 1986 in various villages in the Makarivsky raion, but as soon as a spring breeze hit the air, they became determined to come home to Opachychi. About 100 of the village’s original 400 residents did return, despite the fact that this was prohibited by law.

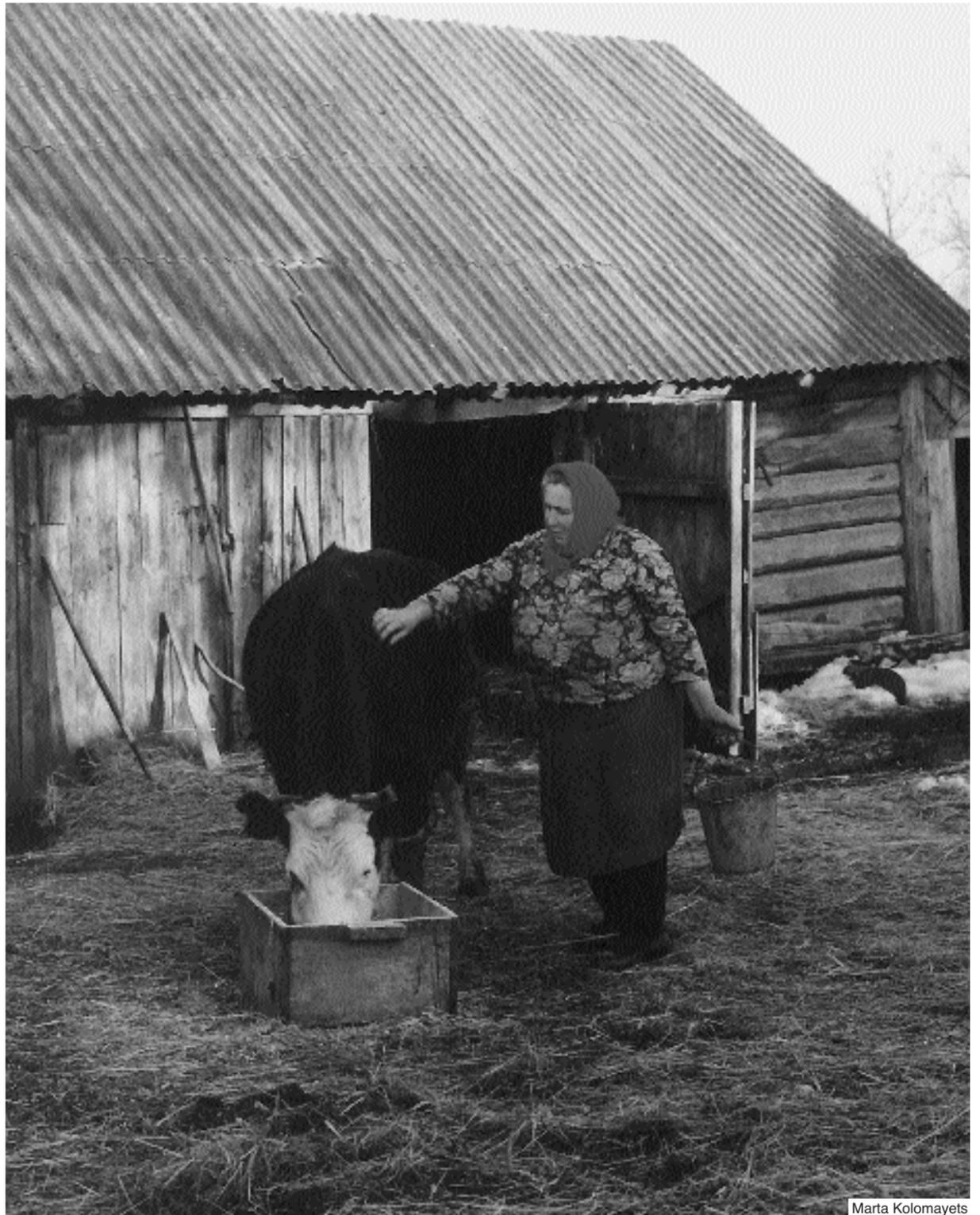
Many Opachychi residents paid off the head of the collective farm near Opachychi – who traveled back and forth to bring feed from the contaminated zone for the livestock transported to clean areas – to sneak the residents of Opachychi back into the zone. Others made their way home through the backwoods, bypassing the control checkpoints set up on the border of the 30-kilometer zone to monitor the traffic into the contaminated area. As a rule, the men came back earlier, to prepare the land for spring planting, while the women followed a few months later.

Still others were never evacuated, according to a recent study conducted by sociologist Yuriy Sayenko, who in December 1995 went through the villages in the zone, talking to resettled residents. In a random sampling of 100 people, about half of them never left the zone.

A total of 485 people are registered to live in the zone, but in reality more than 600 – including 100 or so squatters – reside in the exclusion zone, according to Mykola Urupa, governor of the Ivankiv raion, who is also administratively responsible for the residents of these villages.

“We have given up on trying to resettle these people, because they will just keep coming back,” said Mr. Urupa during a recent interview in his Ivankiv office, just 30 kilometers (18 miles) from the zone.

“I was born here, and I will die here,” proclaims Maria Shovkuta, 67, who remembers the days in the Makarivsky raion as the worst of her life. “I felt cramped living with two other people in a tiny room. Nothing was familiar to me, I felt trapped,” she said, while showing her two-room wooden shack, with a shed



Marta Kolomayets

Ulana Makukha tends her cow in her hometown of Opachychi, located within the 30-kilometer “dead” zone.



Residents of Opachychi wait for the “store on wheels” to arrive with supplies.

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## CHORNOBYL: THE FIRST DECADE

# Yale/Columbia conference examines latest information on Chernobyl's impact

by Roma Hadzewycz

NEW HAVEN, Conn./NEW YORK — "Chernobyl: Ten Years After," a conference held at Yale and Columbia universities on April 8-9, examined the multifaceted consequences of the world's worst nuclear accident, looking at its effects on public health and the environment, its social and political impact, energy alternatives for Ukraine, and response from the international community.

Among the conference's major revelations:

- Dr. Vladislav Torbin of the Ministry of Chernobyl and the Medical Department of Ukraine's Cabinet of Ministers provided an updated official figure on the number of deaths in Ukraine directly attributable to the Chernobyl accident. Since the meltdown at the nuclear power plant through the end of 1995, 148,000 persons, among them 2,800 liquidators, have died in Ukraine alone.

- Dr. Alexander Sich, a nuclear engineer who lived and worked at the Chernobyl complex for 18 months, reported that the accident management actions taken in the first days after the nuclear disaster were ineffective or were not accomplished as reported by the Soviets. In particular, the helicopters dumping boron, lead, sand and other materials into the reactor core had largely missed their target and the core remained mostly uncovered. In the end, the reaction in the stricken reactor simply ran its course within 10 days, and the active phase of the accident came to an end. Dr. Sich also reported that the amount of radioisotopes released as a result of the accident was at least three times, and possibly four times, the 50 million curies originally reported by Soviet authorities.

In addition to five panels covering the aforementioned topics, the two-day conference featured opening addresses by Dr. Yuri Shcherbak, Ukraine's ambassador to the United States, and Anatoly Zlenko, the country's ambassador to the United Nations, as well as luncheon speeches by Ivan Kuras, deputy prime minister for humanitarian affairs of Ukraine, and Volodymyr Yavorivsky, a member of the Ukrainian Parliament who has been intimately involved with the Chernobyl issue since day one.

Sponsored by the Chernobyl Challenge '96 coalition, the commemorative conference was hosted at Yale University by the Council on Russian and East European Studies and the Chopivsky Family Foundation, and at Columbia by The Harriman Institute.

Support was provided also by the Petro Jacyk Program for Ukrainian Studies (Columbia University), the Yale Ukrainian Initiative, the Children of Chernobyl Relief Fund and the Shevchenko Scientific Society.

The conference was opened at Yale University's Law School auditorium by Michael Holquist, chair of the Council on Russian and East European Studies.

### "Chernobyl is not in the past"

Ambassador Zlenko opened the first day's session with a presentation on international cooperation in minimizing Chernobyl's consequences. First, however, he provided some sobering statistics regarding the aftermath in Ukraine: 3.5 million persons, nearly one-third of them children, are affected by the disaster; 160,000 have been resettled, which means that 50,000 families have lost their homes. The ambassador cited a figure of 6,000 dead, but cautioned that the exact figures are unknown.

What is known, however, is that "there will be lasting consequences," Mr. Zlenko stated. For example, 800,000 liquidators, mostly young men sent to "eliminate the consequences of the accident," now face an uncertain future in terms of health. "Chernobyl is not in the past. Chernobyl lives with us today, and it will be with us in the future."

He noted the three principal challenges faced by the Ukrainian government: to meet the social and economic needs of the accident, an expenditure of 12 percent of the annual state budget; to minimize the suffering of those directly affected by the accident, especially children; and to guarantee a safe and clean environment, not only for Ukraine, Belarus and Russia, but for all European nations.

At the conclusion of his remarks Ambassador Zlenko noted the political decision made by President Leonid Kuchma to close down the Chernobyl plant by the year 2000. He underlined that he hopes the international community would honor its commitments to help Ukraine face the ramifications of Chernobyl. (The full text of Ambassador Zlenko's address appears on page 11.)

### The nuclear accident's "hidden truths"

"Hidden Truths and Consequences: Chernobyl's Effect on Public Health" was the title of the conference's first panel, chaired by Martin Cherniak of the

Yale University School of Public Health, who noted "we are running out of time" to do the studies so necessary to learn about Chernobyl's effects.

The first speaker, one of the researchers who has sought to learn the truth about the Chernobyl accident, was Dr. Alexander Sich, who is now affiliated with the Nuclear Safety Account of the European Bank for Reconstruction and Development and soon will direct the new International Chernobyl Center. Dr. Sich spent 18 months in the zone beginning in October 1991 in order to reassess the management actions taken to mitigate the consequences of the accident.

He explained that he was prompted to conduct this research due to the widespread skepticism that not everything had been said about the Chernobyl accident and the fact that in 1990-1991 the first cases of thyroid cancers apparently related to the accident were already being reported.

Dr. Sich began his remarks by pointing out that, at the August 1986 experts' meeting of the International Atomic Energy Agency in Vienna, the Soviets had reported on the "success" of their intervention in containing the burning core and halting radioactive releases into the environment. And, yet, Dr. Sich's research found that "There was no human intervention that caused the accident to stop; it stopped by itself."

In fact, "The helicopter pilots' actions turned out to be in vain," he said, as through no fault of their own they missed when attempting to smother the fire in the reactor core. They were aiming at a "red glow" which turned out to be located, not in the core, but on the floor of the central hall located about 15 meters away from the reactor shaft. As a result, the core remained uncovered and radioactive releases continued, with the most active releases taking place in the first nine to 10 days.

To this day, however, the IAEA considers the Soviet version of events presented in Vienna to be accurate. "The IAEA knows there is something wrong with the initial account," Dr. Sich concluded, adding, "I don't know why they have stayed with it."

Criticism of the IAEA was continued by Dr. Murray Feshbach, professor of demography at Georgetown University and author of "Ecocide in the USSR" and, most recently, the "Environmental Atlas of the Russian Federation."

"The IAEA is a large part of our problem" in understanding Chernobyl, he stated. In 1989 that agency had brought in experts to study the accident's effects. However, it was only three years after the event, and, therefore, the effects were not yet in full evidence; and the population studied included only the 100,000 residents of the immediate area who were evacuated. Furthermore, the IAEA did not have access to data controlled by a secret department of the Ministry of Health and, thus, the scale of the consequences was misunderstood.

He noted that a marked increase in the incidence of thyroid cancer has already been reported, particularly in Belarus; and he expressed surprise that very little

leukemia has been recorded in the affected regions, but said he is suspicious that much information is hidden under different categories of illnesses. He went on to note that he expects the near future will bring increases in lung cancers — particularly among the liquidators, as plutonium aerosols entered into their lungs.

Dr. Feshbach concluded that there is a potential for much more thyroid cancer, higher leukemia rates, lung cancers and other diseases — "all of the effects have not yet been seen." He cautioned also that if the figures on radiation releases are actually quadruple those originally reported (as some research has shown), the effects will be much greater, and previous estimates of morbidity and mortality will have to be revised accordingly.

Next to speak was crusading journalist Alla Yaroshinska of Moscow, who in 1992 uncovered secret protocols of the Kremlin that proved the Soviet leadership knew much more about the severity of the Chernobyl accident than it admitted. A story about the facts revealed in the minutes of the Politburo's operational group on Chernobyl, headed by Prime Minister Nikolai Ryzhkov, was published by *Izvestiya* under the headline "Forty Secret Protocols of the Kremlin's Wise Men." Ms. Yaroshinska is also the author of the recently released book "Chernobyl: Forbidden Truths" (University of Kansas, 1995).

A former deputy to the USSR Supreme Soviet who now is an adviser to President Boris Yeltsin, Ms. Yaroshinska focused on three fundamental points in her presentation.

First, she said, there is no doubt that a "global deception was under way" as the Politburo had made a political decision to take steps to make the consequences of the Chernobyl accident seem less severe. For example, the government made great efforts to get hospitalized people released. The Politburo's minutes indicate there were 10,000 persons hospitalized in Ukrainian hospitals in the first two weeks after the accident, and the Politburo decided to raise the lifetime permissible dose of radiation by tenfold, and in some instances by 50-fold. Thus, in an instant, she noted, "all these people were deemed to be healthy."

Second, a political decision was made that irradiated meat was not to be discarded, but was to be mixed — one part contaminated product to 10 parts "clean" — and sold throughout the USSR, except Moscow.

Third, different information was released to the press for internal consumption and for dissemination abroad. "There were different levels of deception" for the internal USSR audience, for the Warsaw Pact states and for the West. "This proves that [Soviet leader Mikhail] Gorbachev lied when he told the world we did not know about the consequences of Chernobyl," Ms. Yaroshinska emphasized.

"Who will answer for what occurred at Chernobyl in Ukraine in 1986? This remains unanswered," Ms. Yaroshinska stated. She then pointed out that the ones guilty of covering up Chernobyl's effects are "those

(Continued on page 19)



Roma Hadzewycz

Journalist Alla Yaroshinska addresses the Chernobyl conference at Yale University on April 8. Seated from left are: Murray Feshbach, Alexander Sich, Dr. Daniel Hryhorczuk, Dr. Wladimir Wertelecki and Alexander Kuzma.

## CHORNOBYL: THE FIRST DECADE

# Columbia dinner highlights achievements, tasks ahead

by Yarema A. Bachynsky

NEW YORK — A cross-section of individuals and organizations involved in the monumental and ongoing task of helping the children of Chernobyl gathered at Columbia University's Low Library Rotunda on April 8, to reaffirm their commitment to ameliorating the devastating consequences of the world's worst nuclear accident.

The commemorative dinner, hosted by Ukraine's Mission to the United Nations and the Children of Chernobyl Relief Fund, began as Ukrainian Parliament Deputy Volodymyr Yavorivsky gave the invocation. Dr. Mark von Hagen, director of Columbia University's Harriman Institute, acquainted guests with the evening's program and introduced the university's president, George Rupp. The program proceeded with several speakers giving their takes on the problems spawned by Chernobyl.

Anatoliy Zlenko, Ukraine's permanent representative to the United Nations, in his memorial address, pointed out that, although it had occurred a decade ago, the effects of the Chernobyl disaster would continue being felt for generations throughout Ukraine, Belarus and indeed throughout the entire world, in the form of increased incidence of many cancers and suppressed immune system response.

Ambassador Zlenko also highlighted the immense psychological toll that the disaster has taken and continues to take on the affected population, which is scattered throughout all parts of Ukraine. He compared the stress and depression suffered by many Chernobyl victims to that of the "Vietnam War syndrome," a form of post-traumatic stress disorder.

The ambassador called on the G-7 countries to help the severely overburdened Ukrainian government deal with Chernobyl.

"We are all one people, and we all have our common tragedies," he concluded, calling on the international community to make a serious and unified effort to deal with Chernobyl.

Ivan Kuras, deputy prime minister of Ukraine, currently visiting various programs affiliated with CCRF in the United States, echoed the ambassador's thoughts in his keynote address. Mr. Kuras pointed out that the accident of Chernobyl was and remains the worst in the entire history of nuclear power generation. It was a "special disaster" never before experienced by mankind. It must therefore be treated as such by all countries, said Mr. Kuras.

Following Mr. Kuras' address, Vira Hladun Goldman read greetings from Ukrainian President Leonid Kuchma.

The highlight of the evening came just prior to Mr. Kuras' keynote address, as the CCRF Executive Director Nadia Matkiwsky introduced WABC News anchor Roz Abrams. Ms. Abrams had visited Ukraine and become acquainted with the CCRF while filming a special program on the Chernobyl disaster. Her brief but moving comments conveyed an admonishment to



Taras Ferencevych

Guests at the Chernobyl 10th Anniversary Commemorative Dinner honor the memory of the disaster's victims.

the Ukrainian American community.

"Children do not ask to be born. We all owe them a responsibility," the news anchor stated.

"In 10 years we've lost sight of the tragedy"[of Chernobyl], continued Ms. Abrams, referring to the U.S. news media's scanty coverage of the accident and its consequences. It is up to the Ukrainian American community to keep Chernobyl in front of the media eye, according to Ms. Abrams. If this is not done effectively, then the community should not expect additional significant mainstream coverage until the 25th anniversary, i.e. in 2011.

Commenting on seeing children in Kyiv hospitals suffering from Chernobyl-induced cancers, Ms. Abrams simply said: "It changed me. You, too, must be changed."

Joseph Vena, chairman of the CCRF board of directors, read a statement by Jack Palance, in which the actor told of the great suffering caused by Chernobyl and the absolute need for the world to focus more clearly on the truly global effects of the accident. Mr. Palance was unable to attend the dinner due to illness. He will travel to Ukraine to participate in Chernobyl commemorations there.

Following brief remarks by Dr. Zenon Matkiwsky, president of the CCRF, and Kate Coyne, vice-president of the St. Barnabas Health Care System, which has been involved in CCRF airlifts since 1989, Deputy

Yavorivsky delivered closing remarks. Mr. Yavorivsky recalled how his and Dr. Yuri Shcherbak's investigations of the Chernobyl accident were censored and covered up by Soviet authorities in the months following the disaster. Mr. Yavorivsky said the cover-up propelled him and Dr. Shcherbak, today Ukraine's ambassador to the U.S., into politics and served as a wake-up call for proponents of Ukrainian independence.

However, warned Mr. Yavorivsky, Chernobyl can still serve as Ukraine's undoing. "If an economically sound and powerful country could not fully cope with a Chernobyl-like disaster without any outside assistance, then how can Ukraine be expected to?" questioned Mr. Yavorivsky.

The program ended with a benediction by CCRF's Ksenia Kyzyk, as all lit candles in memory of Chernobyl's victims.

Sixteen countries' diplomatic missions to the U.N. were represented at the dinner, among them those of Austria, Belarus, Russia, Germany, Japan and France.

Representatives of U.S. corporations contributing aid to CCRF operations were also present. Among these are the Monsanto Co., whose representative, former Congressman Toby Moffett, spoke on the need for corporate investors in Ukraine to help resolve the consequences of Chernobyl; Pharmacia-Upjohn; Searle Pharmaceuticals; and Ramada Corporate Hotel Center of East Hanover, N.J.

## Younger generation reflects on Chernobyl anniversary

by Yarema A. Bachynsky

NEW YORK — Ukrainian American university students and young professionals are an integral part of diaspora efforts at helping Ukraine deal with the consequences of the Chernobyl disaster. Some work full-time with organizations such as the Children of Chernobyl Relief Fund. Others contribute as and when they can, whether through donations or volunteer work. Still others raise awareness of the Chernobyl accident and its effects among their mainstream American peers.

All share a common belief in the need for constant consciousness-raising efforts by the Ukrainian American community, so that in this year of election politics, a golden opportunity to turn Ukraine's Chernobyl tragedy into a living lesson for the world is not missed.

At the 10th anniversary commemorative dinner held on April 8 at Columbia University, The Weekly spoke with a number of twenty-and-thirty-something individuals, to see what they felt had, could or should be done by the Ukrainian community to make the world deal with Chernobyl.

Mark Hatalak, a computer and program analyst

whose work has brought him to Kyiv on a number of occasions, said the Chernobyl accident highlights the relative benefits and drawbacks of nuclear energy. "Clearly, the negative consequences of nuclear energy generation can outweigh the benefits," said Mr. Hatalak. From his contacts with residents of Ukraine, Mr. Hatalak has heard that there is insufficient explanation of the long-term dangers of radiation exposure, and this helps stress people out unduly. This information gap ought to be corrected, Mr. Hatalak felt.

Nadia Kihiczak, an environmental science/pre-med major at Columbia University, commenting on Roz Abrams' speech at the dinner, thought it was a boon to the community that an "outsider" such as Ms. Abrams, who is a co-anchor on WABC-TV News here, could be so moved by the victims of Chernobyl, to publicly pledge to do all in her power to highlight the world's worst nuclear accident. Ms. Kihiczak said the Ukrainian government should stress the international, global nature of the tragedy in order to garner aid.

George Boichuk, an attorney, noted that those assembled at the dinner were, on the whole, younger than the audience at typical community gatherings. Mr. Boichuk said he felt Ukrainian American youth itself needs to become more involved in Chernobyl aid efforts.

Reflecting on the diverse backgrounds of those present at the evening's commemoration, Adriana Melnyk, president of the Ukrainian Society of Columbia University and a student of international banking, thought the event was an excellent opportunity to show "outsiders" how the Ukrainian American community works on problems affecting it. In Ms. Melnyk's view, students and youth in general should make American academia and environmental groups more aware of Chernobyl, so that these entities would then publicize the situation to the general public.

Xenia Piaseckyj, who is employed by an environmental consulting firm whose clients include the Environmental Protection Agency, and who was involved in the preparation of the CCRF dinner, said that the single best way to bring the significance of Chernobyl home to the American public is to personalize it. Ms. Piaseckyj mentioned, in particular, Ms. Abrams' reminiscences of her experience in Kyiv, seeing actual "children of Chernobyl" suffering from all-too-real illnesses.

The diaspora must learn to network and reach out beyond its own, if it is to ensure that the Chernobyl disaster is properly dealt with, according to Ms. Piaseckyj.

## CHORNOBYL: THE FIRST DECADE

### Chornobyl: new challenge to the world community

*Statement by Dr. Yuri Shcherbak, ambassador of Ukraine to the United States, delivered on April 9 at the Columbia University conference "Chornobyl: Ten Years After."*

I am pleased and honored to be here with you this morning at the world-famous Columbia University at a forum that is so close and special to me, as an eyewitness of those sad events, at a conference commemorating the victims of the Chornobyl catastrophe and addressing the burning issues of how to deal with its drastic consequences.

By the totality of its consequences, the accident at the Chornobyl nuclear power plant in 1986 is the largest modern disaster, a national calamity that touched upon the destinies of millions of people living on vast territories. This catastrophe has brought before the Soviet Union and the world community at large the necessity of solving new and extremely complex and comprehensive problems dealing practically with all spheres: the political and social system, the economy, industrial development and the state of science and technology, legal norms and laws, culture and morals.

In the chain of the worst technogenic disasters of the 20th century, Chornobyl occupies a special place. This is an absolutely new phenomenon of modern technical civilization that has a number of characteristics making it unprecedented.

The first peculiarity is the peaceful character of the catastrophe, if one could describe it that way.

No one planned a military operation under the code name "Chornobyl"; there was no subversion or sabotage. Chornobyl emerged as if out of nothing, anonymously; it was forecast by nobody. The catastrophe became possible due to the combination of a number of incidental factors in which, however, an ominous regularity can be seen.

This regularity can be described as the threat presented by the ever-growing complexity and unreliability of technical supersystems, and the concentration and centralization of huge energy, chemical, informational and biological capacities which can get out of control and pose a threat to mankind's sustainable development.

Chornobyl is an alarm signal sent to mankind from the future; it is a warning about the possible destruction of humankind and the environment as a result of the quite good intentions of technocrats. But, as we know, "the road to hell is paved with good intentions."

Chornobyl was a hard blow to the technocratic philosophy of old optimistic rationalism. There is a world fraternity of technocrats propagating technological chauvinism and technological imperialism, that is, the idea of the supremacy of the technosphere over all other

areas of human spiritual activity, such as people's morality, trust in God, intuitive insight and the ability to forecast possible consequences.

Chornobyl has shown that humankind's advances in technology can lead to deleterious dead ends.

The second peculiarity of Chornobyl is its global character. A catastrophe of this scale knows no boundaries, no political, social or national barriers.

The territory of Ukraine, Belarus and Russia contaminated by radiation exceeding 1 curie per square kilometer totals about 145,000 square kilometers with a population of 7 million. This area is equivalent to the territory of Belgium and Austria taken together. Other countries contaminated by Chornobyl include Poland, Finland, Georgia, Sweden, Norway, Austria, Bulgaria, Hungary, Romania, Italy, Great Britain, Switzerland, Germany, Turkey, Greece and Yugoslavia.

Chornobyl has acutely raised the question of the necessity of international regulations and international cooperation in case of global disasters.

Chornobyl's third peculiarity is its destructive impact on the state, political and economic systems of the former Soviet Union. It was a stability and soundness test for all state mechanisms charged with quick decision-making on issues related to the security of millions of people and informing the population. The command and administrative one-party system of the former Soviet Union did not survive the Chornobyl test and completely lost its credibility among the people.

At the same time, we have to admit that under conditions of that authoritarian and centralized system, in order to overcome the results of the catastrophe, Soviet authorities managed to mobilize the existing human and material resources of this huge country and to draw upon the economic, military, police, science, technology and medical potential of the USSR to effect large-scale and unprecedented measures.

To overcome the catastrophe's consequences, 210 military units of chemical engineering troops and air force were mobilized, totaling about 340,000 enlisted men. About 2,500 medical doctors and 5,000 nurses were employed; about 400 special medical units were formed. In the construction of the "shelter," the sarcophagus, 10,000 workers were employed, 360,000 tons of concrete were used, about 500,000 metal constructions were erected. For the population evacuated from the zone, about 21,000 houses were built and 15,000 new apartments provided. In 1987 the construction of a new city for Chornobyl nuclear power plant personnel was initiated, and the city's population now is 26,000.

As a result of these unprecedented measures, the economic losses, even when calculated in very low Soviet prices, amounted to over \$10 billion, and the indirect costs were \$25 billion. Over recent years, the new independent Ukrainian state had to spend \$800 million to \$900 million per year to solve post-Chornobyl problems.

The fourth and maybe the most important peculiarity of Chornobyl is that this catastrophe raises, on an inter-

national scale, the problem of the internal stability of any state having nuclear power plants, as well as the problem of protecting such facilities from hostilities or terrorism. The possibility of a civil war should be eliminated in countries where nuclear plants are located. It is easy to imagine the consequences for mankind if there were nuclear plants in Bosnia, Chechnya, Tajikistan or other hot spots of the planet.

We believe it is high time to conclude a special international agreement that would proclaim as a crime against humanity any hostilities on the territory of countries having nuclear power plants, irrespective of the reasons or character of the conflict (whether it is an ethnic or religious one, a civil war or an invasion by a foreign country, etc.). It is also necessary to elaborate an effective mechanism for rapid reaction by U.N. forces or other international organizations in case of the initiation of armed conflict on territories where nuclear plants are located. Chornobyl's experience shows us how dangerous the destruction of a reactor is; at the time of the explosion, there were over 230 metric tons of nuclear fuel (uranium) in the reactor. According to official data, as a result of the accident over 90 million curies of radioactivity were released, though the real figures are much higher. Even now in the ruins of the fourth reactor (i.e., within the sarcophagus) 180 tons of nuclear fuel remain, including over 2.3 tons of uranium-235 and 700 kilograms of plutonium with general radioactivity of 20 million curies. I want to remind you that an atomic bomb of the Hiroshima type contained only 10 kilograms of plutonium.

Any hostilities, even those using conventional arms, pose the threat of a conflict turning into a nuclear war.

The fifth peculiarity is the involvement in the catastrophe of large population masses — first of all children, the presence of thousands of environmental refugees, long-term contamination of soil and water, and irreversible changes in the natural environment and ecosystems.

By mid-August of 1986, in Ukraine over 90,000 people from 81 settlements were evacuated, in Belarus — 25,000 people from 107 settlements. From 1990 to 1995, due to the radiation conditions and because of social and psychological factors, 52,000 citizens of Ukraine, 106,000 citizens of Belarus and more than 46,000 people in Russia were resettled. According to the latest data, as a result of the accident 50,500 square kilometers of Ukraine's territory, with a population of 2.4 million in 2,218 settlements, were contaminated.

A dead zone has formed around the Chornobyl NPP, covering an area of 2,044 square kilometers, encompassing two cities and 74 villages.

The sixth peculiarity of Chornobyl is the presence of considerable social, psychological and medical consequences. Despite the fact that a relatively small number of people died immediately after the accident (31 persons died of acute radiation sickness, as compared to hundreds during the chemical disaster in the Indian city of Bhopal), the long-term consequences are grave and cause great tension in the work of state agencies and medical services of Ukraine. For example, 5,000 people have lost the ability to work. The sickness of 30,000 so-called "liquidators" is officially attributed to the aftermath of the catastrophe. According to the Greenpeace Ukraine organization, over 32,000 people died as a result of the accident. The population mortality in the most affected regions increased by 15.7 percent as compared to the pre-accident period.

A group of Kyiv researchers (S. Komissarenko et al., 1994) has conducted a medical survey of a group of liquidators and has found that the majority of these people have chronic fatigue syndrome accompanied by depression of a certain subclass of lymphocytes, the so-called natural killer cells that have the power to kill the cells of tumors or virus-infected cells. These defects of the natural immune system were named "Chornobyl AIDS"; in the short term, this could cause an increased rate in leukemias and malignant tumors, and makes a person more susceptible to "normal infections," like bronchitis, tonsillitis, pneumonia, etc., which last longer and acquire grave clinical forms.

In contaminated regions of Ukraine and Belarus there was a sharp increase (by 10 times) of thyroid cancer morbidity. Chornobyl has given rise to a psychological syndrome comparable to that suffered by veterans of wars in Vietnam and Afghanistan. Among children evacuated from the zone there has been a 10- to 15-fold increase in the incidence of neuro-psychiatric disorders.

Immediately after the accident, on the orders of the Communist Party, a real political and propagandist battle in interpreting the possible medical consequences of Chornobyl was begun. The official representatives of



Yuri Shcherbak, then a leader of the Green movement in Ukraine, addresses a 1991 rally in Kyiv.

(Continued on page 11)

## CHORNOBYL: THE FIRST DECADE

### International response to the Chernobyl disaster

*Opening remarks by the permanent representative of Ukraine to the United Nations, Ambassador Anatoliy M. Zlenko at the conference "Chernobyl: 10 years after." The remarks were delivered on April 8 at Yale University.*

Ten years ago the world suddenly realized where my state – Ukraine – is located. Unfortunately, this enormous and unexpected interest was instigated by a tragic event whose scope and consequences became known to the Ukrainian people – and we see in this yet another tragedy – only months, and even years, later.

On April 26, 1996, the people of Ukraine will mourn thousands of dead and ill 10 years after the Chernobyl disaster. Statistics are merciless. A total of 3.5 million people, nearly one-third of them children, were affected by disaster when the so-called "peaceful atom" went wild. More than 160,000 people were resettled. That means that more than 50,000 families had lost their homes.

Nearly 6,000 persons – predominantly young men known as "liquidators," have died as the result of their exposure to radiation. Regrettably, we do not know the exact figure of those who died as a result of radiation-related causes.

In Ukraine we have come across an unnatural phenomenon – contradictory to common sense and natural instinct – women even now, 10 years later, are afraid to give birth to children. Here we are dealing with the lasting consequences of the so-called "Chernobyl syndrome."

This is only the humanitarian side of the problem. There are environmental and technological aspects to be considered as well. Nearly 2,000 hectares of land are in the "exclusion zone," where the ruined reactor is located. Conditions in the zone are extreme: there are high concentrations of radioactive cesium, strontium, plutonium and other transuranic elements, over 800 temporary depositories of radioactive waste, and large areas of woodland and fields no longer suitable for cultivation where fires are frequent.

All the rivers and streams in these marshy areas flow through contaminated land in Belarus and Russia into Ukraine, threatening to carry fallout from the Chernobyl cloud into the Dnipro River. I would add, for your information, that water from the Dnipro is used by over 30 million inhabitants of Ukraine.

The problem of liquidating the consequences of Chernobyl, mitigating its negative effects and normalizing the lives of the people of Ukraine – first of all of those who were directly affected by the disaster – are among the priorities of the Ukrainian government.

In my opinion, the Ukrainian government faces three major issues:

First: to meet the socio-economic challenge of Chernobyl. Annually, Chernobyl costs Ukraine 12 percent of its state budget. The bulk of this money is directed toward the social needs of those who suffered during the catastrophe.

It is understandable that spending in this sphere cannot be cut for both humanitarian and political reasons. In this context, we must count on the international community. As more Ukrainian goods and services are given access to the world market, profits to the Ukrainian state increase and more attention can be paid to the victims of Chernobyl.

Second: to minimize the sufferings of those who were directly affected by the Chernobyl disaster – first of all, the children.

It is with great gratitude that the people of Ukraine accept the kind support and generous assistance given by the international community. It would take me hours, and probably days, to name those states, public organizations and private persons all over the world who have felt our pain and have come to help in critical moments. But I have a moral obligation to thank the governments and NGOs of the United States, Cuba, Germany and Japan, whose sincere assistance in alleviating the consequences of our tragedy can hardly be overestimated.

By helping Ukrainian physicians cope with deadly diseases, our friends worldwide help us to guarantee the future of the people of Ukraine who face the serious problem of preserving their very existence. I would like to draw your attention to the fact that the real danger of Chernobyl has not lessened, notwithstanding the fact that 10 years have already passed since the tragedy.

Chernobyl is not in the past. Chernobyl lives with us today. Chernobyl is in our future. Its danger will follow

us for many years. It is possible to heal the wounds of war in several years. But it is impossible to determine the exact amount of time it will take us to overcome the deadly effects of residual radiation from Chernobyl on the population and environment of Ukraine.

Third: to guarantee a safe and clean environment for future generations of, not only Ukrainians, Belarusians and Russians, but also of other European nations. To this end, we should resolve the issues of liquidating or sealing the power plant's destroyed block and of disposing of radioactive waste. Unfortunately, Ukraine has neither the financial nor the material resources to do this alone. In this context, my government has suggested the establishment of an International Scientific and Technological Center for Nuclear and Radiological Accidents to enhance the capabilities of the international community to study, mitigate and minimize the consequences of such accidents.

The principal goal of this center is to concentrate the efforts and consolidate the potential of world science in establishing approaches, technologies and recommendations aimed at preventing accidents and effectively mitigating the consequences of nuclear catastrophes.

In Chernobyl scientists would have an opportunity to put their theoretical knowledge on a practical footing and to obtain priceless experience in dealing with nuclear accidents. My government is grateful to the states and organizations that have answered its appeal and are ready to do their best in resolving this critical issue.

We appreciate the contributions made by the member-states and organizations of the U.N. system in the fields of study, mitigation and minimization of the Chernobyl aftermath. Thanks to the United Nations, a number of projects and agreements regarding international cooperation in minimizing the Chernobyl disaster's effects are now being implemented in Ukraine.

We are grateful to the World Health Organization, which actively cooperates with bodies of the Ukrainian Ministry of Health and the Academy of Medical Sciences in the field of management of the Chernobyl disaster's aftermath.

We attach great importance to the UNESCO Chernobyl Program, under which three centers for social and psychological rehabilitation of the population affected by the Chernobyl disaster have been established in Ukraine.

We are looking forward to the outcome of five projects implemented under the aegis of the International Atomic Energy Agency, among which I would like to point out those connected with evaluating the impact of the "shelter" erected over the fourth reactor of the Chernobyl nuclear power plant on the environment, establishing a system of radiation control at milk-cannery industry facilities, and ensuring radiation safety of nuclear power engineering.

Responding to the concerns of the international community and striving to preserve future generations from the scourge of nuclear disaster, President of Ukraine Leonid Kuchma has taken a political decision to decom-



Taras Ferencevych

**Ambassador Anatoliy Zlenko at the commemorative dinner held at Columbia University's Low Library rotunda on April 8.**

mission the Chernobyl NPP by the year 2000. In order to fulfill this decision, the full-fledged economic and technical assistance of developed countries is badly needed. We hope that the commitment undertaken by G-7 countries will be honored, because of the financial, technical and social problems Ukraine will be facing after the closure of the last Chernobyl reactor. Thus, the decommissioning of the Chernobyl plant by the year 2000 will mean the resolution of the major part of the West's political problems, while for Ukraine new problems will arise.

We hope that the international community is beginning to understand our problems. One of the signs that this is the case is the adoption by the 50th session of the U.N. General Assembly of the resolution on "Strengthening of international cooperation and coordination of efforts to study, mitigate and minimize the consequences of the Chernobyl disaster."

At the end of my opening remarks, I would like to pay tribute to the organizers and co-sponsors of this important conference which, heeding the words of the aforementioned U.N. General Assembly resolution, will "enhance public awareness of the consequences of such disasters for human health and the environment throughout the world" and thus will mobilize the efforts and potential of the international community in its attempt to overcome the consequences of the Chernobyl disaster.

### Chernobyl: new challenge...

(Continued from page 10)

Soviet medicine, as well as some representatives of the nuclear industry complex in the West, tried to deny any consequences of Chernobyl for human health. For that these people were nicknamed "Chernobyl nightingales," i.e., extreme optimists. On the other hand, there were "black pessimists" who forecast the death of nearly the entire Ukrainian nation.

The truth is that the medical consequences are undoubtedly there, but taking into account the exceptional complexity, the multitude of factors and the durability of Chernobyl's aftermath, today it is very difficult to give a final quantitative estimate. This explains huge discrepancies in data about deaths caused by the accident that are cited by authors from different organizations. At the same time, however, it is immoral to deny serious medical consequences for the health of people in Ukraine and Belarus, such as have appeared recently in some respectable Western publications. This could be compared to publications in anti-Semitic newspapers stating there where no gas chambers in Auschwitz, or no Nazi crimes at Babyn Yar.

An important seventh peculiarity of Chernobyl is that, even after 10 years, it still requires the close attention of the international community. The world at large must finally comprehend that Chernobyl is not an internal affair of Ukraine.

The closure of the plant means the loss of at least 7

percent of electricity produced at the time of an energy shortage, as well as the possible loss of 5,000 jobs. The estimated costs of the shutdown, including the creation of new energy sources and social protection for the personnel, are \$4.4 billion (U.S.).

The building of a new sarcophagus will require approximately \$1.5 billion. Ukraine and the G-7 countries last December signed a formal agreement on a cooperative plan to shut down the whole Chernobyl plant by the year 2000. The agreement establishes that the European Union and the U.S. will help Ukraine devise plans to mitigate the effects of the shutdown on local populations. It also sets up mechanisms to allow donor countries to expedite safety improvements at the reactors still in use. In addition, the agreement provides for international cooperation in decommissioning the plant, as well as in the biggest problem of all: an ecologically sound, long-term replacement for the sarcophagus that was built around the ruins of reactor No. 4.

Dear friends! Perhaps the most tragic peculiarity of Chernobyl is that mankind has yet to fully understand the dramatic consequences of the accident and the warnings it brings.

Chernobyl must teach the nations of the world a dreadful lesson in preparedness if we are to rely on superpowerful and hyperdangerous nuclear technology. Humankind lost a sort of innocence on April 26, 1986. We entered a new post-Chernobyl era, and we have yet to realize all the consequences.

Let God, our Lord, save mankind from new Chernobyls



David Marples

The ferris wheel above (photographed in 1989) was brought into Prypiat just before the April 26, 1986, nuclear accident at Chernobyl. It was to be used for May Day festivities in the town where plant workers resided.



May 1986: A public memorial service and rally in Buffalo, N.Y., held in the first days after the disaster.



Roma Hadzewycz

February 10, 1990: An Antonov-124 (Ruslan) awaits its humanitarian aid cargo at Kennedy International Airport in New York, marking the first airlift of the Children of Chernobyl Relief Fund.

## CHORNOBYL: TH

### A summary of 10 years

On the night of April 25, 1986, operators at the Chernobyl nuclear power plant in the northern part of the Ukrainian SSR conducted a test on the generators in the plant's fourth reactor. In order to run the test, power to reactor No. 4, a 1,000-megawatt RBMK-1000 design, was reduced and its power systems disabled to curtail interference with test results.

The RBMK-1000 has a design flaw that makes operation at low power unstable. At 1:23 a.m. on April 26, realizing that the running of the test had become hazardous, an operator pressed a button to activate the automatic protection system, which should have shut the reactor down.

Instead, power production in the reactor's core surged to 100 times the normal maximum level, causing a drastic increase in temperature. Within seconds, two powerful explosions blew off the 2,000-metric-ton metal plate that sealed the top of the reactor, spewing radioactive debris one-half mile into the atmosphere.

In his article "Ten Years of the Chernobyl Era" (Scientific American, April 1996), Dr. Yuri Shcherbak, Ukraine's ambassador to the United States, wrote that the blasts released both aerosolized fuel, consisting mostly of uranium mixed with plutonium, the most toxic element known, and radioactive fission products — iodine-131, strontium-90 and cesium-137 — into the atmosphere.

Winds carried the radioactive debris north and west, showering radioactive particles over the Soviet republics of Ukraine, Byelorussia and Russia, most of Eastern Europe, Scandinavia and as far away as Japan and the United States.

Military personnel and "volunteers" were immediately bused in to contain a fire that resulted from the second explosion. That fire, fueled by the hundreds of tons of graphite which had served as a moderator in the reactor, burned for 10 days. By the end of the summer, over 600,000 clean-up workers would be dispatched to Chernobyl.

Within 12 hours the Soviet government had set up a high-level commission to ascertain the damage to the plant, the largest nuclear power plant in the Ukrainian SSR and the fourth largest in all of the Soviet Union, and to direct recovery operations. A 30-kilometer evacuation zone surrounding the plant was erected. On April 27, the government began relocating the 49,360 residents of the neighboring town of Prypiat.

A full 48 hours would pass, however, before the Soviet government, prompted by the discovery by Swedish authorities of unusually high radiation levels in that country, acknowledged, in a terse, four-sentence announcement by Radio Moscow on April 28, that a nuclear accident had taken place at Chernobyl. It would be another two weeks before Communist Party General Secretary Mikhail Gorbachev provided more details on the accident in a televised speech on May 14.

The West responded to news of the disaster with offers of financial and medical assistance. On April 30, the Soviet government formally refused an offer of aid from the International Red Cross, claiming that it had the situation under control. Ukrainian Americans and Ukrainian Canadians launched mass protests at the United Nations and Soviet diplomatic missions in New York, Chicago, Washington and Ottawa.

In the days following the explosion, the Soviet government did not warn its people to stay indoors, or refrain from drinking tap water and eating fresh produce. Instead, on May 1, authorities in the Ukrainian capital of Kyiv, 80 kilometers south of Chernobyl, permitted the annual observance of May Day. While hundreds of children marched in a parade honoring the working man, high-ranking officials scrambled to send their children out of the country.

In June, the head of the Chernobyl power plant was fired and expelled from the Communist Party. The chairman of the State Atomic Power Inspection Ministry, the deputy minister of the Power Engineering and Electrification Ministry, the first deputy minister of the Medium-Machine Building Ministry and the deputy director of the Scientific Research and Construction Institute were dismissed as well.

On August 25, during a special International Atomic Energy Agency conference on Chernobyl held in Vienna, the Soviet government tried to rebuild its credibility by reporting more fully on the explosion at Chernobyl, submitting a 382-page report on the medical, environmental and energy consequences of the disaster. The report blamed the accident on human error — workers violating safety measures while conducting an authorized experiment. Five years later, in 1991, the Soviets would admit that a design flaw in the RBMK-1000 was the cause of the explosion. The Soviets claimed that 50 million curies of radioactivity were released in the explosion. A Massachusetts Institute of Technology study, based on 18 months of research and released in January 1994, however, puts the figure at over 150 million curies.

Six months after the explosion and fire, in October, reactor No. 1 of the Chernobyl plant was put back on line. In November, reactor No. 2 was put back on line, and a 10-story, concrete-and-

## THE FIRST DECADE

### beginning April 26, 1986

metal protective casing, commonly known as the "sarcophagus," was completed around reactor No. 4.

#### Human consequences

In 1986, the Soviet government officially recognized 187 people as suffering from acute radiation sickness, 31 of whom died. Burn victims were treated in Kyiv hospitals as early as April 26, while those suffering from radiation exposure were treated in Moscow by Dr. Robert Gale, a bone-marrow specialist from UCLA. At that time, Dr. Gale was the only specialist from the West allowed to treat Chernobyl victims.

During the IAEA conference held in August, the Soviet government had predicted that in the 70-year period following Chernobyl, 6,500 more people would die of cancer as a result of direct radiation exposure and an additional 30,000-40,000 from indirect exposure from contaminated food supplies.

Ten years later, those figures ring strikingly untrue. Dr. Shcherbak cites the following statistics in *Scientific American*:

- The environmental organization Greenpeace Ukraine estimates that 32,000 in Ukraine have died as a result of Chernobyl.
- The Ukrainian government cites some 30,000 clean-up workers as suffering from illnesses related to radiation exposure.

- Research has shown that iodine, a component of the radioactive fission particles spewn into the atmosphere after the explosion, collects in the thyroid gland. Ukraine's over-all rate of thyroid cancer among children has increased about 10-fold from pre-accident levels and is now more than four cases per 1 million: in 1981-1985 the number of thyroid cancers in Ukraine was about five a year; in 1986-1991 it had grown to 22 cases a year; in 1992-1995 it reached an average of 43 cases a year. In 1986-1995, 589 cases of thyroid cancer were recorded in children and adolescents.

- Ukrainian and Israeli scientists have found that one in every three clean-up workers is plagued by sexual or reproductive disorders. The number of pregnancies with complications has risen among women living in contaminated areas.

- Chernobyl contaminated over 35,000 square kilometers of land in Ukraine — more than 5 percent of the state's total area.

- 2.6 million people in Ukraine have been exposed to excess levels of radiation, 700,000 of whom are children.

In the four months following the explosion, 135,000 people were evacuated from contaminated areas in Ukraine, Byelorussia and Russia and resettled in temporary housing or new communities. In a herculean, Soviet Union-wide effort, the city of Slavutych was built to house Chernobyl-area evacuees. Today, Slavutych is home to Chernobyl plant workers and boasts a population of 26,000, 11,000 of whom are children.

#### The 10-year aftermath

In the 10 years following the Chernobyl disaster, new information would continue to arise regarding the dangers of radiation exposure. International institutions like the World Health Organization, the United Nations and the Group of Seven industrial states would offer first Soviet Ukraine and later independent Ukraine assistance in combating Chernobyl's aftermath. Hundreds of Ukrainian community organizations in the United States and Canada would spring up with offers of donated vitamins, medicines and medical equipment. In February 1990, the Children of Chernobyl Relief Fund based in Short Hills, N.J., would launch the first of 16 airlifts carrying medical equipment and supplies to Ukraine.

In 1987, the World Health Organization acknowledged that the explosion at Chernobyl had elicited five main concerns: the contamination of forests, long-term disposal of contaminated topsoil, contamination of lakes, consumption of contaminated food products and the danger of spring flooding bringing contaminated ground water into the river systems.

On July 4-29 of that year, six officials from the Chernobyl plant stood trial for violating safety regulations during the April 26 test; the head of the plant and two aides were sentenced to 10 years in labor camps.

In 1988, the first demonstrations protesting Chernobyl took place in Kyiv in April, November and December. At the December 4 mass rally, speakers Oles Shevchenko of the Ukrainian Helsinki Union and Dr. Shcherbak, then chairman of the environmental association *Zelenyi Svit* (Green World, formed in 1988) called for full disclosure on Chernobyl by the Soviet government.

By 1990 Ukrainian SSR government officials were publicly admitting that official Soviet secrecy surrounding the Chernobyl accident and its aftermath had given rise to health and environmental problems in Ukraine.

In May, for the first time since the explosion at Chernobyl, the Soviet Union, the Byelorussian SSR and the Ukrainian SSR applied for international assistance to combat the accident's aftermath. The republics turned to the United Nations Economic and Social Council (ECOSOC) to expand international efforts concerning

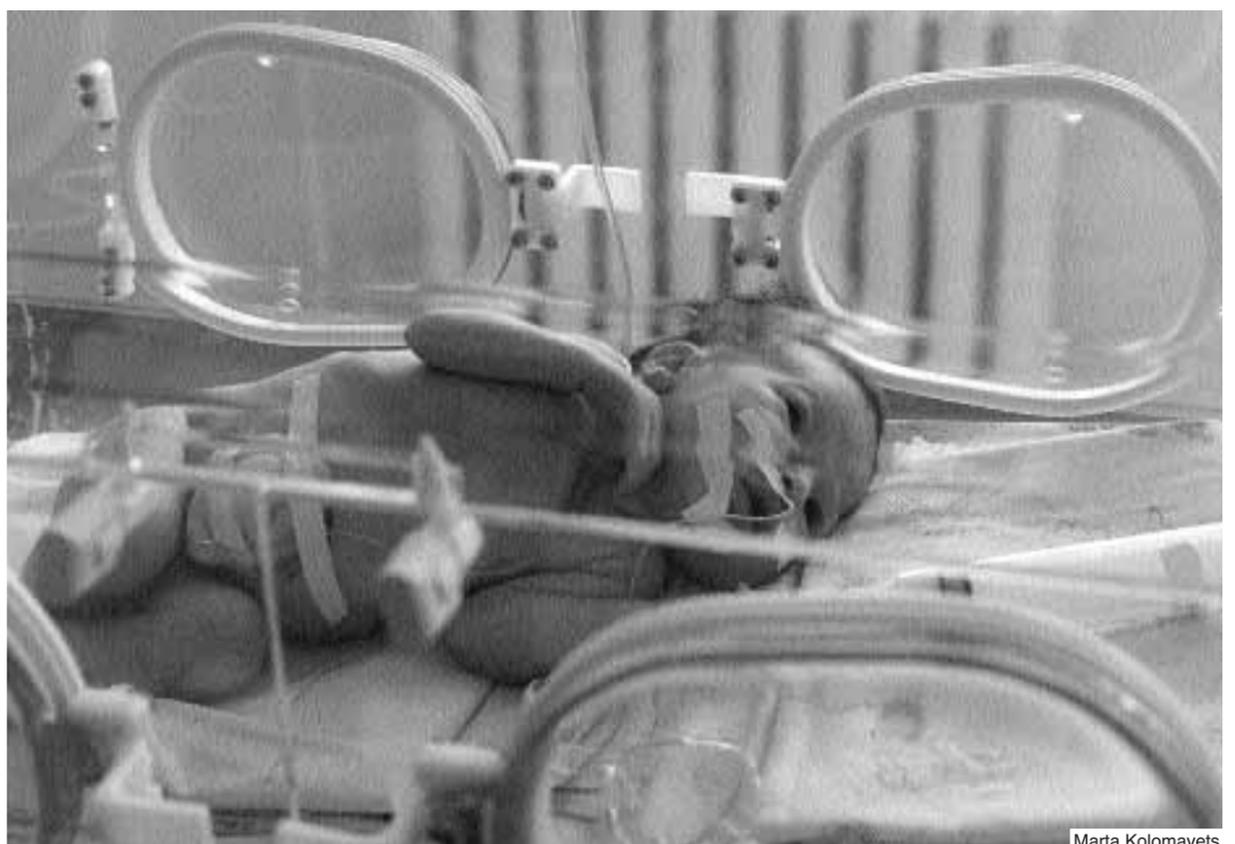
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On the fifth anniversary in 1991: (on the left) in Kyiv, Deputy Volodymyr Yavorivsky displays a child's depiction of Chernobyl's tragedy; in Boston, Sen. John Kerry with little Vova Malofienko at a public rally.



October 11, 1991: fire damage causes the roof over reactor No. 2 at the Chernobyl power plant to cave in.



Marta Kolomayets

March 1991: Baby girl Sushko (as yet unnamed) at Pediatric Hospital No. 14, which treats children of Chernobyl.

## CHORNOBYL: THE FIRST DECADE

### Canada takes an active role in battling the consequences

by Christopher Guly

OTTAWA – From the political power brokers in Ottawa to interested – and, in some cases, unconventional – individuals, Canadians have taken an active role in helping Ukraine in its Chernobyl clean-up operations.

During its tenure as chair of the G-7, the Canadian government hosted a December 20, 1995, signing in Ottawa of a memorandum of understanding and aid package between the Group of Seven industrialized countries and Ukraine. The G-7 is composed of Canada, the United States, Britain, France, Germany, Italy and Japan.

The deal promised Ukraine \$2.3 billion (U.S.) in compensation and assistance to close the Chernobyl site by 2000 – including \$498 million in grants and \$1.8 billion in loans to Kyiv to help find new sources of electric power for Ukraine.

It followed a 1994 decision by the world's top seven economic powers to establish a \$200 million (U.S.) fund to assist Ukraine in ensuring the safety of its nuclear reactors. At the time, Canada contributed \$24 million (about \$18 million in U.S. dollars) to the multi-year program. According to the Department of Foreign Affairs and International Trade, that amount – 12 percent of the total – was three times higher than Canada would "normally provide for such an effort."

Last December, Canadian Deputy Prime Minister Sheila Copps and Ukraine's acting head of the State Committee on the Use of Nuclear Energy, N.R. Nigmatullin, signed a nuclear cooperation agreement that would initiate bilateral trade in nuclear material and equipment.

"This agreement will allow the Canadian nuclear industry to pursue commercial opportunities in support of the restructuring of Ukraine's energy sector," said Canada's former minister of foreign affairs, André Ouellet.

Between July 1993 and December 1994, Natural Resources Canada ran the Chernobyl GIS Project, a \$350,000 (about \$257,000 U.S.) Canadian International Development Agency (CIDA) initiative involving geographic information, system-based environmental assessment and monitoring systems in Kyiv and Minsk to help Ukrainians with effective planning to minimize the aftereffects of the 1986 disaster.

Following President Leonid Kuchma's 1994 visit to Canada, Prime Minister Jean Chretien's government gave Ukraine \$3.3 million (about \$2.3 million U.S.) to

finance a three-tiered nuclear fuel management project led by Ontario Hydro International Inc. of Toronto. The arrangement involved transferring Canadian high-density concrete canister technology for the short-term storage of used nuclear fuel to power plants at Chernobyl and Rivne in northwestern Ukraine.

Canadian businesses are also trying to help Ukraine find alternative sources of energy. Uk-Ran Oil Corp. is leading a project to kick-start 160 oil wells in Leliakiv – about 60 miles east of Kyiv. Working with Britain's JPX, the Calgary-based Tenerex is pumping 10 million cubic feet of gas and 3,000 barrels of oil daily from the Poltava region, while Toronto-based Northland Power has been working on a heat-and-power project for the Kyiv suburb, Darnytsia, which would modernize an existing plant and install new Canadian-made generators and boilers.

#### Sealing the sacophagus

While corporate Canada got involved in post-Chernobyl Ukraine, Main Street Canada wasn't far away. Willy Nelson, a 54-year-old candlemaker from Perth, Ontario, west of Ottawa, has spent the last three years espousing his theory that the burned-out, now concrete-encased No. 4 reactor at Chernobyl could be "healed" with wax. Since 1993, Mr. Nelson has claimed that he could stop the stricken reactor from leaking or collapsing using paraffin technology. Last summer, he used wax to rustproof the steel reinforcing rods, which have been exposed to the elements since the April 26, 1986, accident.

Before he left for Ukraine, Mr. Nelson told *The Weekly* the wax could seal the cracks – preventing rain from entering and radioactive dust from exiting.

Though Mr. Nelson's idea received endorsements from the Ukrainian government and such organizations as the Canada Mortgage and Housing Corp., success has eluded him – and ultimately, Chernobyl.

But, if anything, his spirited approach and subsequent media attention has kept the 1986 Chernobyl disaster alive in many people's minds.

"If we can mitigate the effects now, we can save the children of tomorrow," said Mr. Nelson.

#### Helping the children

That's a message the Children of Chernobyl Canadian Fund has been spreading for years. Through its "Help Us Help The Children" project, the group has shipped hundreds of thousands of dollars worth of medical supplies and essential goods to the most innocent of Chernobyl's victims.

When the reactor blew a decade ago, it went down in history as the site of the world's worst nuclear accident



Marta Kolomayets

#### Ukraine's Minister of the Environment Yuriy Kostenko.

– spreading radiation across much of northern Europe. Close to 900,000 children throughout Ukraine alone were believed contaminated by the deadly aftereffects.

The University of Alberta Faculty of Medicine also was involved in working with young victims, between January 1992 and February 1994 through the Chernobyl's Children Project. The \$934,800 (about \$687,000 U.S.) CIDA program developed medical consultancy, and teaching and training services to create a model pediatric facility at Children's Hospital No. 1 in Kyiv.

CIDA also contributed \$550,000 (about \$404,000 U.S.) to UNESCO's Chernobyl treatment centers. Canadian medical specialists helped train staff and treat patients at the Special Clinic for the Protection of

(Continued on page 18)

## U.S. State Department overview of the accident at Chernobyl

Following is the text of the State Department statement titled "Overview: The Accident at the Chernobyl Nuclear Power Plant," released in Kyiv on March 19.

In the early hours of April 26, 1986, during a test on the turbines in Chernobyl's Reactor No. 4, a catastrophic explosion in the reactor core destroyed much of the reactor building. The explosion and subsequent fire released massive quantities of radioactive substances – radioactive iodine, cesium-137, strontium-90 – into the atmosphere. The fire raged for nearly two weeks, before being extinguished May 10. Most of the 31 individuals officially recorded as dying during or immediately after the disaster were plant personnel or firefighters with little or no protection against radiation. Some 600,000 individuals from throughout the former Soviet Union helped with the clean-up that followed.

Although arguments persist over the explosion's immediate cause, contributing factors include basic flaws in the reactor's design, shoddy plant construction, the extreme riskiness of the test procedures used the night of the explosion, and a poor safety culture throughout the Soviet nuclear establishment. The affected reactor also had no containment structure.

Prypiat, a town of some 30,000 housing plant personnel and their families only two kilometers from the plant, was evacuated two days after the explosion. Further evacuations subsequently created a 30-kilometer exclusion zone around Chernobyl. In total, some 133,000 people were evacuated, although some individuals refused to leave the zone.

#### The impact on Ukraine

Although precise figures may never be known, thou-

sands of deaths or deformations may have been linked in some way to the accident. The health effects of the accident clearly have been severe. There is general agreement that the accident led to a dramatic increase in thyroid cancers among Ukrainian children, from approximately six cases a year before the accident to between 30 and 40 cases per year since 1990. It is also generally accepted that a rise in leukemia among "liquidators" – those who helped deal with the immediate consequences of the accident at the plant site – can be attributed to irradiation. The U.S. Department of Energy and Ukraine's Ministry of Health are now discussing cooperative studies of leukemia among the liquidators.

In addition to these known health effects, there has been a dramatic decline in public health as a whole throughout Ukraine. Though the general decline in public health cannot be tied scientifically to Chernobyl, many believe the accident has played a significant role in the deteriorating health of individuals living in irradiated areas.

Estimates of the financial and human costs of the accident vary greatly. The Chernobyl Ministry estimates Ukraine has spent over \$3 billion in the four years since independence on Chernobyl-related health and clean-up costs. More than 5 percent of the draft 1996 budget – some \$693 million at current exchange rates – has been allocated for dealing with the accident's consequences. About 65 percent of this sum is devoted to direct payments – for example, rent, utilities, medical and other types of subsidies – to those affected by the accident, currently estimated at about 3.2 million people. The remainder is largely targeted for construction costs to resettle those in contaminated areas and for clean-up of affected areas. More than

180,000 hectares of arable land and 237,000 hectares of forest land have been rendered useless due to radioactive contamination. An additional 3 million hectares of arable land is still cultivated but has higher than normal radiation levels.

#### International assistance

The international community has provided significant assistance to the former Soviet Union and Ukraine over the last 10 years to cope with the consequences of Chernobyl. Projects financed by the international community include: the International Atomic Energy Agency's International Chernobyl Project, designed to help create safer living conditions in areas hit by radioactive contamination; World Health Organization programs to monitor the accident's health effects; and more than six current European Commission/TACIS-sponsored programs, including scientific cooperation to remediate affected agricultural and forested areas, cooperative health studies, and donations of medical diagnostic equipment.

The United States has contributed over \$100 million worth of humanitarian and medical assistance to Ukraine over the last four years. On the 10th anniversary of the accident, USAID expects to distribute some \$20 million in humanitarian assistance to victims of Chernobyl and to donate a mobile radiation-measuring unit. The Department of Energy has earmarked approximately \$13 million for ongoing nuclear safety improvement projects at Chernobyl. In addition, the G-7 and international financial community have so far marshaled \$2.3 billion – \$498 million in grants and \$1.8 billion in credits – for efforts aimed at ensuring Chernobyl's closure by the year 2000.

## CHORNOBYL: THE FIRST DECADE

### *With humans evacuated, wildlife flourishes in the "dead" zone*

by Mary Mycio

Special to *The Ukrainian Weekly*

CHORNOBYL, Ukraine – Ihor Shokhalevich recalled the autumn evening he spotted a boar munching on apples outside the local drugstore.

"He wasn't bothering anyone," the biochemist said, smiling at the incongruous image of the tusked pig in what was a busy raion center before the Chernobyl reactor exploded and burned 10 years ago.

Since 135,000 people were evacuated in the disaster's radioactive wake, there haven't been many people for a boar to bother in the highly contaminated "zone of alienation" surrounding the power station.

Not surprisingly, many people imagine the zone as a barren wasteland killed by radiation. In fact, by forcing people to abandon the Rhode Island-sized region 60 miles north of Kyiv, the world's worst nuclear accident created a new ecological niche that is very much alive.

"The zone has become a wildlife refuge," said Mr. Shokhalevich.

Large animals that are especially shy of civilization have rebounded. The number of boars has increased eightfold since 1986. The moose population has doubled. Eagles, cranes and endangered black storks have reappeared. There are also more roebucks, wolves, foxes, otters and rodents than outside the zone.

"And there are no monsters!" insisted zone ecologist Vitaly Gaichenko in response to the inevitable questions about mutants. "If wild animals are weak, they die."

That so many creatures are, in fact, flourishing leads Chernobyl scientists to the surprising conclusion that for wildlife, the benefits of a human-free environment can outweigh even the biological costs of radiation.

There are no more than 10,000 people in the entire zone on a given day. Nearly all are in one of two places named "Chernobyl": the atomic energy station and this eponymous town 12 miles away, where the Administration of the Zone of Alienation performs its dystopian task of governing the no man's land.

But in the evenings, when humans leave for lodgings in "clean" areas, a boar can dine a few blocks from Mr. Shokhalevich's office in the Chernobyl Research and Technical Center, undisturbed.

At least when Olof Eriksson isn't in town. The sporting Swedish scientist and Ukrainian zoologist Herman Panov bagged more than 60 boars and that many roebucks over three years to study how much radioactivity they were absorbing.

Indeed, because zone rules forbid hunting for sport but not hunting for science, the immediate danger to zone animals isn't from radiation but researchers on the lookout for guinea pigs.

Mr. Eriksson's study was one of hundreds conducted since the 1986 explosion and fire transmuted the zone into a radiological field experiment.

After 10 years, 95 percent of the cesium, strontium and plutonium in the zone have sunk about an inch into the topsoil and riverbeds. That's good because they are deep enough not to be spread by the rivers and wind, although they are also traveling very slowly to the ground water.

But it's bad because, from the soil, radionuclides – or radioactive atoms – get into the food chain, migrating into plants, the animals that eat them, and the predators, including humans, who eat both.

In the body, different radionuclides target different tissues where they can lodge, and bombard neighboring cells with atomic particles and, in the case of americium, gamma rays. In bone marrow, which makes blood, the resulting damage can produce leukemia. In ovaries, it can affect future generations.

"But the more we learn, the more we don't know," said biologist Victor Riasenko, who spent five years studying laboratory minks fed contaminated meat that delivered "relatively small doses."

The experiment began in still-Soviet 1990 when, to prove that it hadn't bungled dismally, the Soviet government tried to show that the zone could still be put to economic use. Mink farming was thought to be a good idea.

As it turned out, radiation didn't get into the minks' fur, but their pelts shed within a year. Minks born in the zone failed to thrive. Their numbers shrank with each generation. Of the fourth, none survived weaning.

"This showed that even small doses aren't so small when they're internal," Mr. Riasenko concluded. "And the minks that lived the longest were those that were born and weaned in clean areas."

Wild animals are also accumulating radionuclides. Mr. Eriksson bagged some boars and roebucks with more



Marta Kolomayets

**Prypiat today: a slogan hailing the Party of Lenin is seen on the wall of a deserted apartment building.**

internal cesium than the Lapland reindeer of his native Sweden absorbed in the early months after the disaster.

In his study of Chernobyl rodents, University of Texas geneticist Robert Baker also found large numbers of cesium – and large amounts of rodents, even in places where background radiation is 100 times normal.

"I was a little surprised at how well living things are doing," said Mr. Baker.

Still, Mr. Baker also found genetic mutations in some rodents could bode ill for their future. Chernobyl mice also have depressed immune systems and, like Mr. Riasenko's minks, die younger and reproduce less. Moose, too, are more often seen with one calf rather than the usual two.

Although there are now more mice and moose and other creatures in the zone than outside its 139-mile perimeter, scientists don't know if those biological costs won't eventually come to outweigh the habitat's human-free benefits.

A "pessimistic optimist," Mr. Riasenko thinks that the diversity and number of animals will decline as the Chernobyl environment winnows out weak species and individuals. But the survivors of the Darwinian struggle, "though fewer in number, will be more resistant to radiation," he said.

"Evolution in the zone has speeded up," said ecologist Mr. Gaichenko. "But we need at least 20 more years to see the direction it's taking."



**Frozen in time: incongruous gas masks amid toys and books in a Prypiat schoolroom.**

## CHORNOBYL: THE FIRST DECADE

### Life in the zone...

(Continued from page 7)

in the back and a well in the front yard.

"It would be more traumatic to move these people out of their homes at this point in time than to let them live out the last of their days in their own homes," said Ivan Kirimov, the Parliament deputy who represents the zone of alienation, as well as the young city of Slavutych, where most of the Chernobyl nuclear power plant workers now live.

"Most of the people in the villages are in their 60s and 70s and, given the average life span in the former Soviet Union (74 for women, 64 for men), I think that resettling them outside their native lands will be more devastating than allowing them to live out their lives in the 30-kilometer zone," he added. Their sons and daughters have all gotten married and have been resettled in the Kyiv, Poltava and Zhytomyr oblasts.

#### Priorities must be reviewed

Volodymyr Kholosha, who chairs the Ministry of Chernobyl set up in May 1991 to deal with the consequences of the nuclear accident, agrees that the priorities established five years ago in developing a list of guidelines related to Chernobyl should be reviewed.

"The residents of contaminated areas who were evacuated have adapted poorly to their new homes, and some have even expressed the desire to move back to the villages they left. More than one-third of the evacuees questioned said they did not consider resettlement a priority. It is also important to take into account that many who live in zones 2 and 3 [zones of "obligatory" and "voluntary" evacuation] have already received 70 percent of their maximum lifetime dose of radiation," he told the Ukrainian Parliament recently.

Yuriy Kostenko, Ukraine's minister of environment and nuclear safety, recently said continuing the evacuation program has become unnecessary because radiation levels had dropped and money allocated for this program would be better spent on medical care and facilities for people affected by the Chernobyl accident.

Dr. Olha Bobelova, the head doctor of the Chernobyl Division at the Ukrainian Ministry of Health, explained:

"Those who wanted to leave have already left and are unlikely to come back, and those who wanted to come back have done so. But after 10 years there should be some kind of conditions set for those who live in the zone. After all, the doses they receive are mainly through the food chain; thus, it is possible to prevent them with modern farming techniques, with finances that will allow them to import food from environmentally clean zones."

Vasyl Herashchenko, 69, when asked if he worried about the effects of radiation sickness, said "How can you be afraid of what you can't see?"

"You should see the mushrooms I pick in our forest. I've never tasted better mushrooms than those that grow wild here. I tell you, we were resettled in areas where the ground

was like clay. I couldn't grow anything there. (The land in the Makarivsky raion, located in the forest-steppe region of Ukraine, is known for its black soil, "chornozem," while the Chernobyl region is located in the sandy soils of the Polissia, the forest streak of northern Ukraine.)

Despite the fact that bread and butter is brought in for the residents of Opachychi, most of them live off of what they grow, including potatoes, tomatoes, cucumbers, beets. Some keep dairy cows and raise pigs for slaughter, to have a supply of fresh meat and homemade sausage.

"My kids often come to pick freshly grown vegetables in our garden," explained Mrs. Makukha. "After all, what's a mother for?" she said, speaking affectionately of her four children and eight grandchildren, who are now scattered throughout Ukraine – in Kyiv, Mykolayiv, Makariv and Dytiatky, just outside the 30-kilometer zone.

"Our cow gives us fresh milk; what we don't use we give to our neighbors," says Mrs. Makukha, who lives in the village with her husband, Ivan, 67.

Treating her guests to fresh milk, marinated mushrooms, varenyky and fried fish, dosed down with home brew, Mrs. Makukha recalled the B.C. (before Chernobyl) days:

"There was a bus that traveled to Chernobyl from Opachychi four times a day (about a 20-minute ride), and we could get on a hydrofoil on the Prypiat River, just a few kilometers away, and go to Kyiv. But why go to Kyiv, when in Chernobyl you could get anything you wanted if you had the money?"

She continued, "But now we feel isolated and, worst of all, unwanted. Who needs us?"

Although her pension is only 2.6 million karbovantsi (\$15) a month as of this year, Mrs. Makukha has received additional Chernobyl funds, which brings her monthly wages to 10 million kvb (more than \$50 a month). She, like all the people who live and work in the zone, were allocated additional subsidies last month by the Parliament, but they say they have not yet seen the money.

#### A tour of Opachychi

Mr. Herashchenko offers visitors a tour of the village, strolling past the skeletal remains of a once-flourishing mid-sized village in Polissia. He points out abandoned houses, remembering those who died before the disaster, those whose children moved to the city to escape the dead-end existence of life on the collective farm, those who have died since the evacuees returned in 1986-1987, and those who have moved away forever.

Fate has not been kind to the residents of Opachychi. Soon after the evacuees moved back, in the spring of 1992, a fire raged through the village, burning down about half of the houses. Those who became homeless laid stakes on the abandoned dwellings; others moved away for good.

They compare their lives favorably to those of their friends who lived in the villages of Yampil, Cherepach or Kopachi. Although the first two were totally abandoned, the third, adjacent to the nuclear plant, was so irradiated

that it was leveled its remains buried in the ground.

Of the 70 villages in the 30-kilometer zone, only 10 have been resettled, 10 have been buried, and 50 have been abandoned according to Mykola Lebakh, the 45-year-old chief of the Chernobylinform agency, which runs a research lab and a newspaper called Visnyk Chernobyla (Chernobyl Herald) in the zone.

#### 12,000 workers in zone

Besides the 600 or so residents in the village, there are about 12,000 people who work in the zone, including more than 5,000 plant workers. The plant employees all live in the town of Slavutych, commuting daily into the zone, while other workers who do clean-up maintenance or lab research work on a 15-days-on/15-days-off basis, or a four-days-on/three-days-off schedule, while others stick to the traditional five-day work week.

Driving down the main road of the 30-kilometer zone, observing the first buds on the oaks and sensing the scent of the approaching spring, there are no obvious signs that the world's worst civilian nuclear disaster occurred here 10 years ago.

Along the road there are ironic reminders of the pride of the region – the forests. Signs such as "The Forest – Wellspring of Health," "The Forest – Lungs of the Planet," dot the landscape. Deeper into the zone, however, abandoned schools, streams poisoned with radioactivity, neglected gardens and empty playgrounds reflect the bitter reality that the aging pensioners refuse to acknowledge.

"Sometimes the grandchildren come back during school and summer holidays. Then you hear the young voices again, and it reminds me of Opachychi in the early 1980s. Why, last summer, there were so many kids riding their bikes through the village, that it caused a traffic jam," Mr. Herashchenko joked, adding that if the area had a school, he is sure that quite a few kids would live here.

Today, 6-year-old Vanya Kovalchuk is visiting his grandmother. Both he and his sister often come to Opachychi from Kyiv to visit, because they have the freedom to run around abandoned houses and thick forests.

Mr. Urupa contends that kids do not stay in the 30-kilometer zone for any length of time, but if they have grandparents in the villages, there is little the police can do to stop them from visiting their families.

On this sunny March afternoon, as the pensioners wait for the mobile store to deliver supplies, there is still a chill in the air, but the sun's angle is predicting that spring is on its way. The women – mostly widows – sit on a decaying bench outside waiting for the shipment, while just a few men keep warm nipping at some homemade brew, or "samohon," leaning against a faded red sign that boasts of the victories of the party of Lenin. Inside the abandoned store, with its musty scent and empty shelves, another group of women sits huddled together, gossiping in front of a fire to keep warm.

They may be the last people to live here, for once they die, so will the village of Opachychi.



A 6-year-old visitor, Vanya Kovalchuk.



An abandoned home in Opachychi, in the "zone of alienation."

Marta Kolomayets

## CHORNOBYL: THE FIRST DECADE

### A summary of 10 years...

(Continued from page 13)

Chornobyl. On July 13, ECOSOC adopted a resolution that appealed to the international community for cooperation and assistance in mitigating Chornobyl's consequences.

During the summer months, hundreds of Chornobyl children were hosted for medical treatment and recreation in Belgium, Czechoslovakia, Cuba, France, Germany, Israel, Poland and the United States.

In the fifth anniversary year of Chornobyl, on January 22, 1991, the World Health Organization endorsed a plan to set up an international center for radiation monitoring and treatment in Obninsk, 60 miles southwest of Moscow.

On February 7, the USSR Procurator General announced that he had launched a criminal investigation into the handling of the Chornobyl accident. He charged that officials in charge of clean-up operations had failed to evacuate people quickly, ignored dangerous radiation readings, used slipshod methods to bury contaminated waste, and built resettlement homes in contaminated areas.

On April 12, the United Nations Educational, Scientific and Cultural Organization (UNESCO) pledged \$100,000 for the creation of an international UNESCO laboratory in Kyiv for the psychological rehabilitation of Chornobyl children. Future UNESCO-Chornobyl projects would include fellowships for radiobiology and radioecology research, preservation of culture in the Chornobyl zone, and the study of safe water supplies and land use in contaminated regions. By 1995, nine psychological rehabilitation centers would be set up in Ukraine, Belarus and Russia.

On the eve of the fifth anniversary, the State Industrial Atomic Inspection of the USSR released a report which demonstrated that the explosion at Chornobyl was due almost entirely to the design of the reactor and control rods. The IAEA published the 57-page report, "International Chornobyl Project: An Overview," which many Chornobyl experts found incomplete as the agency did not have access to data controlled by a secret department of the Ministry of Health and because the project had studied only a limited group of those affected by Chornobyl.

On April 22-25, the Euro-Chornobyl II conference in Kyiv reported on new medical findings in contaminated regions. It was at this conference that Dr. Gale, who had treated the earliest victims of radiation exposure, announced that "radiation is less dangerous than cigarettes to the population in Kyiv."

On April 26, Parliament issued a moratorium on building new nuclear power plants on Ukrainian territory.

On October 11, an electrical fire broke out in reactor No. 2 of the Chornobyl plant, causing 1,800 square feet of the reactor's generator room to cave in. The reactor was shut down indefinitely.



Marchers take to the streets in Ottawa on May 17, 1986, in reaction to the nuclear accident at Chornobyl.

On October 29, Ukraine's Parliament voted to shut down the Chornobyl plant no later than 1993. Reactor No. 2 was to be taken off-line immediately, while reactors No. 1 and No. 3 were to be shut down by 1993.

Faced with an energy crunch, however, independent Ukraine was forced to restart reactor No. 3 at the Chornobyl plant one year later, on October 16, 1992, despite protests from the European Community. In December, reactor No. 1 also was restarted. (Chornobyl's two reactors produced 5 percent of Ukraine's power; nuclear energy produced 40 percent of Ukraine's electricity.)

In 1994, Alliance, a consortium of French, German, British, Russian and Ukrainian firms led by Campenon Bernard of France, won an international competition to build a "supersarcophagus" over Chornobyl reactor No. 4, whose sarcophagus had begun to crack. It was estimated at the time that design work would cost \$20 million to \$30 million, and construction, which would take five years, over \$300 million. New estimates put the cost of construction at \$1.5 billion.

On July 8-10, a G-7 summit in Naples pledged \$200 million to close down the Chornobyl plant and strengthen Ukraine's energy sector.

In April 1995, Ukrainian President Leonid Kuchma made a political commitment to close the Chornobyl plant by the year 2000. On December 20, Ukraine signed a memorandum with the G-7 industrial states that would provide Ukraine with \$2.3 billion in financial assistance to close the plant and explore alternative means of energy.

On December 13, the U.N. General Assembly designated April 26, 1996, "International Day in Memory of Chornobyl" and called for improved international cooperation in providing aid for Chornobyl's aftermath.

In April of this year, at a conference held at Columbia and Yale universities, a Ukrainian Cabinet minister revealed that 148,000 people, among them 2,800 clean-up workers, have died in Ukraine as a direct result of the Chornobyl accident.

— Compiled by Khristina Lew

### The ramifications...

(Continued from page 6)

people killed by the earthquake was much higher: more than 8,000 people actually died in that disaster.

"This, along with the misleading Soviet coverage of the South Korean airline incident exposes the Soviet predilection for Lying," Dr. Bociurkiw said.

After the smoke clears from the Chornobyl accident, Dr. Bociurkiw believes Moscow will make strident attempts at "searching for a scapegoat" for internal purposes. In an attempt to maintain face before its own people, the Kremlin leaders will likely point an accusing finger for the embarrassing mishap not at themselves, but towards the management of the Chornobyl power plant and possibly the Soviet ministry responsible for energy, Dr. Bociurkiw said.

The nuclear accident may very well provide the Kremlin with an excuse to conduct a long-awaited leadership shake-up in Ukraine. Dr. Bociurkiw believes Volodymyr Shcherbytsky, the first secretary of the Communist Party in Ukraine, will likely be the first victim of a leadership purge, he said, especially since the Ukrainian leader is depicted as a leftover from the Brezhnev era.

"The people who were in charge locally will also be among the first victims of any reprisals from the Kremlin," Dr. Bociurkiw added.

Although details about the causes of the disaster are unavailable, Dr. Bociurkiw said the management of the Chornobyl plant probably dragged its feet in sending word of the disaster to Moscow.

"Given what we know about the way things work in

the Soviet Union," Dr. Bociurkiw said, "we can speculate that the management of the nuclear reactor did not inform Moscow about the accident immediately." Similarly, the Kremlin likely deliberated extensively about what to do about the accident before it divulged the most basic information to the world, he said.

Management of environmental and nuclear accidents is nothing new to the leadership of the Kremlin, according to evidence published by Western and East European researchers.

Almost as striking as the Chornobyl nuclear accident is information contained in a 1984 top secret CIA and Pentagon report that provides evidence of serious deficiencies in Soviet safety standards at nuclear power plants. The confidential report, first revealed by columnist Jack Anderson, asserts that thousands of Soviet citizens have died as a result of accidents at nuclear power plants and weapons complexes, and on nuclear submarines.

Said the report: "The Soviet nuclear power industry is plagued with manufacturing deficiencies and poor workmanship."

It went on to say that the Soviets often cut corners on safety "to eliminate delays in their trouble-plagued nuclear program."

The report says there have been nearly a dozen plant shutdowns. A reactor in the Ukrainian city of Rivne, for example, went "critical" in 1981; another at Shevchenko was shut down after pipes and turbines were found to have faults.

The CIA report notes that at least three major accidents have occurred in the Soviet Union since the 1950s.

The worst happened in the late 1950s in the Urals when

an explosion in tanks of radioactive wastes spread strontium-90 and other deadly elements into the air. As a result of the accident, in which radioactivity nearly 1,000 times higher than bomb fallout resulted, 30 villages were evacuated. Several hundred square miles were contaminated and three lakes were poisoned for some 300 years. Hundreds of people are believed to have died during the explosion, and hundreds of others died from long-term effects.

It was reported that among the victims were squads of prisoners sent on hopeless clean-up missions. The Soviets now use the area to train troops for nuclear war.

In 1983, a large earthen dam holding back a huge pond of liquid waste near the Ukrainian city of Drohobych burst and sent millions of tons of concentrated saline brine into the Dnister River, causing a serious pollution crisis. Although reports of serious contamination in water supplies in the region had been circulating in Moscow for weeks, news of the spill was not confirmed until a published interview with a government minister indicated that a major disaster had occurred.

Nikolai Vasilyev, the minister of land reclamation and water resources, told a Soviet interviewer that the Drohobych dam burst "because of errors in design and construction." He added that although no lives were lost, the spill disrupted water supplies to millions of people, killed hundreds of tons of fish, and deposited a million tons of mineral salts on the bottom of the 30-mile-long reservoir. Almost a year later a huge gas explosion outside the Ukrainian city of Ternopil fueled a wall of fire so intense that a silhouette of the city could be seen for miles away. There was no mention of the explosion by any of the official Soviet news agencies.

## CHORNOBYL: THE FIRST DECADE

### Antony Froggatt...

(Continued from page 5)

meeting on RBMKs, they did not conclude that RBMKs should be shut down. It is very clear that they should, that they cannot be brought up to an acceptable safety standard.

It is clear that the IAEA does not do its job, if its job is to be a watchdog for the nuclear power industry.

**Why do you think that, when to most of world it seems to be clear that RBMKs are flawed and not adequately safe, the IAEA continues to be a proponent?**

It is basically because the IAEA has a dual function. Article 4 of their charter says that it should promote nuclear power. It's an anachronism that you have a so-called watchdog or regulator and a promoter under the same body. It just doesn't work. If you look at national institutions, in the majority these functions have been split. But on the international level it hasn't.

The [IAEA] has a conflict of interest, and unfortunately, they tend to fall down on the promotional side as opposed to the regulatory side.

**How about the G-7, do you think it has dealt adequately with Chernobyl in terms of finances, or made adequate recommendations to resolve the problems of Chernobyl?**

No. In every G-7 summit since 1992 they've made statements saying, "we welcome the work that has been done on Eastern European nuclear safety," or "we urge the quick closure of high-risk RBMKs and the first generation of EBR reactors," but this has not happened. The G-7 commissioned the World Bank, the International Energy Agency [sic] and the European Bank for Reconstruction and Development (EBRD) to come out with specific plans about how to reduce nuclear risks in Central and Eastern Europe and the former Soviet Union; these have not been followed up.

The reactors are still operating, none of the so-called high-risk reactors have been closed permanently since 1986. Basically, the G-7 has not achieved what it set out to do.

**What more could it do? I mean, are we talking strictly about money here?**

There are two things. There needs to be more money put into assisting the energy sector in the region. But in some ways the most important thing is the direction for this money. The whole problem exists in that nobody will shut down the reactors until the replacement is put forward. In Ukraine, the nuclear power plants contribute 30 to 35 percent of the country's electricity. They are not going to shut them down overnight unless there are alternatives.

Now Chernobyl contributes only 7 percent to the country's electricity. Unfortunately, nobody is investing in alternative energy, or at a quick enough rate to enable this to happen, to shut down Chernobyl.

The obvious thing, which is staring everyone in the face, yet no one is really tackling it, is the question of energy efficiency and energy saving.

In Ukraine they use about seven times as much energy per unit of gross national product as, say, we do in the U.K. So there is a huge potential for energy savings. This type of investment is absolutely crucial for both the environment and the country's economy.

In the past, Russia controlled all the supplies of fuel to Ukraine and the countries of the former Soviet Union, and this was supplied at little or no cost, so there was no incentive to save energy. Consequently, the industry is wasting huge amounts of energy. Also, in terms of the domestic sector, in the flat I live in now there are no valves on the radiator and no thermostat. So when it gets too hot, the only thing you can do is open up the window, and this is madness.

This is why the country continues to operate nuclear power plants, because there is no way in which individuals can save energy, there is no incentive for business to save energy. This is where the direction of Western assistance needs to go. Even the government says that you can save 10 percent of the country's energy demands through measures that will cost nothing, or very little.

This is where Western governments need to assist. It is not easy, it involves structural changes, changes in practice, but it is essential to the environment.

**Besides a statement by President Leonid Kuchma not long ago, I haven't noticed any attempts by the**



The actual sarcophagus (front part of structure) as it appeared in April 1994.

**government to promote or market energy efficiency and savings.**

Not yet. It is a very slow process. They have set up an Institute for Energy Saving Problems, as they call it. This process has gradually started. In Kyiv there is the energy efficiency center sponsored by the European Commission. The USAID is doing work on energy efficiency here. The studies are being done, the pilot projects are now starting, but this needs to be accelerated. And this is where money needs to be directed.

This is one of the unfortunate things: a memorandum of understanding signed by the G-7, the European Union and the government of Ukraine, which seeks the closure of Chernobyl by the year 2000. They put together a package of energy grants to the tune of \$500 million and energy loans to the tune of about \$1.8 billion. But the majority of the loan will go to the completion of more nuclear reactors in Ukraine, and there is only a small amount, if anything, on energy efficiency loans, or grants. They're just wasting the opportunity. They're putting together a package to enable the closure of Chernobyl, yet the package is in the wrong direction.

**Do you see the 10th anniversary commemorations as something that will help propel Chernobyl higher up on the world's public agenda? Are you optimistic that some issues will finally be resolved?**

A mixture. I am very hopeful that the G-7 will do the right thing in Moscow, that they will push forward with a memorandum of understanding and really do start escalating the energy efficiency effort

In terms of revamping the energy structure in Ukraine, which is one of the key things to avoid another Chernobyl, I think it has to happen. As you start seeing the changes in energy pricing, you'll start seeing energy efficiency. When you start seeing some energy efficiency, one hopes that then this will escalate and people will be motivated to start saving energy and instituting energy efficiency measures. Once this happens and people can see the benefits, then the potential will be there to start closing down reactors.

As for the longer term future for people, the millions of people who live in contaminated areas, this is very difficult because it is a human tragedy on such a huge scale — how will their plights be dealt with is just impossible to know. Clearly more money has to be given directly to them and disbursed through the United Nations. It is clear at the present moment the U.N. is saying that we haven't got any more money for this.

**What is Greenpeace planning for Ukraine in**

**terms of 10th anniversary commemorations?**

As we speak, a tour is in the western part of the country to talk to people about Chernobyl and asking people to put their thoughts on Chernobyl down in a book, which will later be presented to the government. At the same time they are talking about alternatives to nuclear power, alternatives to fossil fuels. This is now on its second leg.

Also, the week of the anniversary a large bus which Greenpeace has will come to Kyiv with an alternative energy exhibition. It has solar panels and items to show what is the alternative energy future. Around the anniversary there is an alternative energy conference taking place, so we will park the bus there and show people how it can work.

That's just two things, there will be other activities involving the public, asking them to be involved, petitions, etc.

### Canada takes...

(Continued from page 14)

Children Against Radiation at Hospital No. 14 in Kyiv.

Meanwhile, the University of Toronto National Cancer Institute concluded a two-and-a-half year computerized cancer registry program for 26 Ukrainian hospitals.

**More assistance is needed**

Although the efforts and contributions have been welcomed by many in Kyiv, some Ukrainian officials have suggested more could be done.

For instance, after Ukrainian Environment Minister Yuriy Kostenko signed the G-7 aid deal in Ottawa last December, members of the Ukrainian delegation hinted that the \$2.3 billion package should have been doubled.

And, last summer, Oleksander Moroz, chairman of Ukraine's Parliament, told an Ottawa news conference that Canada and the other G-7 countries unfairly placed a burden on Ukraine concerning Chernobyl. "We understand the responsibility we carry, but it is not just Ukraine's problem, but Europe's problem as well," he said.

Mr. Moroz's pronouncement followed a declaration by G-7 leaders in Halifax last June that hailed President Kuchma's decision to close the Chernobyl nuclear power plant by 2000. "We are pleased to note the commitment of bilateral resources for short-term safety upgrades and preliminary decommissioning work for the closure of Chernobyl," the leaders said.

## CHORNOBYL: THE FIRST DECADE

### *Yale/Columbia conference...*

(Continued from page 8)

individuals who were responsible for protecting the public." They are not being prosecuted, she said, because the statute of limitations has run out. "How ironic, given that Chernobyl's consequences will continue for many years," she commented.

Dr. Wladimir Wartecki, chairman of genetics at the University of South Alabama Medical School, opened his presentation by noting that "chaos and inertia are very effective conspirators against facts and progress," and observing the disproportion between the severity of the Chernobyl accident and knowledge about its effects.

Chernobyl is "not just an ecological disaster," he said, adding that "nothing in the food chain has escaped Chernobyl" and that the accident "destabilizes all species, including our own."

It is a massive disaster of two types: the immediate violent explosion and the slow, chronic disaster whose effects will be felt for decades. "Ukraine is at risk of birth defects in generations to come," and that is why the Rio de Janeiro International Congress of Human Genetics, which will be attended by more than 9,000 top genetics experts, will devote a panel to Chernobyl.

Finally, Dr. Wartecki pointed out, "We talk as if we know Chernobyl's health effects, but we don't," and he added that "learning the facts about its health effects can be very destabilizing for the nuclear industry." Thus, "Chernobyl is not a scientific problem, as science is mute; it is also an ethical problem."

Dr. Daniel Hryhorczuk of the University of Illinois School of Public Health, who is director of the Ukrainian Environmental Health Project established five years ago in Ukraine at the request of then Health Minister Yuriy Spizhenko, spoke about the project's study of thyroid cancers. The joint U.S.-Ukrainian study funded by the Department of Energy has set up a thyroid cancer registry listing children in Ukraine up to age 14 at the time of the nuclear accident at Chernobyl; some 76,000 children are eligible for inclusion into the study which intends to follow them for 15 to 30 years, Dr. Hryhorczuk explained.

Already it has been seen that the highest thyroid cancer rates in Ukraine are in the Kyiv, Zhytomyr and Chernihiv regions — those most affected by Chernobyl's fallout.

Regrettably, Dr. Hryhorczuk noted that the project has now stalled due to a lack of commitment at the highest levels (i.e., the executive and legislative branches) of the U.S. government, and the lack of funds and changing leadership at Ukraine's Ministry of Health.

#### The race against time

The second panel of the Yale session, moderated by Dr. Zenon Matkiwsky, president of the Children of Chernobyl Relief Fund and chairman of the department of surgery at Union Hospital, looked at "The Race Against Time: Seeking Solutions to the Environmental Challenges Surrounding the Chernobyl Disaster."

The lead speaker was Dr. Vladislav Torbin of the Ministry of Chernobyl, who underlined that "the medical consequences of Chernobyl have no medical analogy." After reciting a litany of statistics on the number and categories of people affected by the disaster — including a figure of 3.2 million, which he said is the total number of Chernobyl's victims in Ukraine, among them 1 million children — the physician commented that "every year the number of healthy children in Ukraine decreases."

Dr. Torbin said that, while it is true the general health of Ukraine's population has deteriorated, it has declined even more among the populations affected by the Chernobyl's fallout. Among the liquidators, for example, some 35 percent today are ill. He also pointed to dramatic increases in thyroid illnesses among children and increases in leukemia among the liquidators.

Later, pressed for an updated official figure on the number of deaths due to Chernobyl, the doctor cited a number of 148,000 in Ukraine alone. His statement marked the first time a Ukrainian government official had cited a figure of that magnitude; previously such statistics had been cited by various non-governmental groups, such as the Chernobyl Union.

Further information about the poor state of health of Ukraine's residents was provided by Dr. Olesya Huchiy of the Ukrainian State Medical University and the Department of Public Health. Focusing her remarks on women and children who were the subjects of a 1985-1995 study of the population in the Kyiv area, Dr. Huchiy stated, "We are at the start of a demographic crisis" in Ukraine. The study's subjects were from three regions of Kyiv: an industrial (city) region, an uncontaminated rural

region and a radiation-contaminated region.

In general, she noted an increase of morbidity in women and in newborns, but the rise was most dramatic in the contaminated region, and the least in the rural region. Congenital defects, she added, were up dramatically among newborns in the radiation-contaminated region; infant mortality also was up, caused by prenatal conditions, congenital defects and diseases of the respiratory system.

To sum up, Dr. Huchiy said, "Chernobyl is a major cause of chronic disease and its effects are being felt slowly."

Many of the same findings were reported in Belarus, said Dr. Anna Petrova, co-author of the Comprehensive Belarusian Health Study. Fetal deaths, prenatal deaths, post-natal deaths, low birth weights and congenital abnormalities had increased most in radiation-affected areas, she noted, adding that fully 20 percent of the land in Belarus is contaminated and every fifth person lives on contaminated territories.

Another significant statistic cited by Dr. Petrova was a 25 to 30 percent decrease in the birth rate in Belarus, and this, too, she said could be linked to Chernobyl as one of the results of radiophobia.

Dr. Elaine Gallin of the Office of Medical Programs in the U.S. Department of Energy, touched upon the department's involvement in working with Ukraine to increase the safety of its nuclear reactors and in conducting medical studies in Belarus and Ukraine with a focus on thyroid disease and other ailments, such as cataracts among liquidators. She noted that, unfortunately, the budget for the department's Office of Environment, Safety and Health had been decreased by 25 percent since 1993.

Dr. Allison Keyes of the Nutrasweet-Kelco Co., a

today, the world is far from comprehending the full consequences of this accident; and some would deny those effects, especially supporters of the nuclear industry."

Because of the nuclear accident, Ukraine has lost 30,000 square kilometers of forest and a like amount of arable land, Dr. Hrodzinsky reported. But the main consequence of Chernobyl is the damaged health of large segments of the Ukrainian population: liquidators, evacuees, residents of contaminated areas and children of irradiated parents.

He then went on to illustrate the radiological effects of Chernobyl, referring to cancers, mutations of cells, immune system deficiencies, secondary diseases and both specific and non-specific health effects. Dr. Hrodzinsky spoke of the increased incidence of blood diseases, circulatory disorders and genetic anomalies in children, and noted in particular the dramatic rise in pediatric thyroid cancers in Belarus and Ukraine. He added that the trend has not yet peaked and will continue for the next 40 years.

#### The social and political impact

During the panel presentation on the social and political impact of Chernobyl, chaired by Prof. Alexander Motyl of the Harriman Institute, Dr. David Marples, professor of history at the University of Alberta and author of three books about the consequences of Chernobyl, chose to focus his remarks on the accident's reverberations in Belarus.

Belarus received 65 percent of all the radioactive fallout. "Virtually the entire republic was affected by the fallout of iodine-131; today the danger is from cesium, strontium-90 and plutonium-239," Dr. Marples noted. In 1992, medical specialists noted a rise in general morbidity

### *With the Chernobyl explosion, humanity began to understand not only its vulnerability, but also its responsibility.*

— Ivan Kuras, deputy prime minister of Ukraine.

unit of Monsanto, spoke in detail about the use of alginate (a seaweed extract) in lessening the effects of strontium-90 when it is ingested in contaminated food. Last month, Dr. Keyes noted, Ukraine had approved the use of an alginate product known as Algisorb as a drug to reduce the gastrointestinal absorption of strontium-90 and its deposit into bones.

She announced that Monsanto, Nutrasweet-Kelco and Biotechnologia (Moscow) were donating a supply of Algisorb sufficient to treat 500 children for one year. The donation was made to mark the 10th anniversary of the Chernobyl accident.

#### A change of venue

The conference resumed the next day, April 9, at Columbia University's School of International and Public Affairs with welcoming remarks by Prof. Mark Von Hagen, director of the Harriman Institute, and an opening address by Ukraine's ambassador to the United States, Dr. Yuri Shcherbak.

A founding member of the Green World ecological association and former chairman of the Green Party of Ukraine, Dr. Shcherbak referred to Chernobyl as "the largest modern disaster" and called on all to rise in a moment of silence for its victims. He then proceeded to delineate the "peculiarities" of this "unprecedented disaster," including its peaceful character, its global ramifications — as its effects know no boundaries, and its destructive impact on the state, political and social structure of the Soviet Union.

Chernobyl is notable also because it brought significant social, medical and psychological consequences, involved large numbers of the population and did long-term damage to the environment, the ambassador said. The Chernobyl accident is extraordinary also because, "even after 10 years, it still requires the close attention of the international community," as it is not an internal affair of Ukraine.

"Perhaps the most tragic peculiarity of Chernobyl," Dr. Shcherbak concluded, "is that mankind has yet to fully understand the dramatic consequences of the accident and the warnings it brings." (The text of Ambassador Shcherbak's address appears on page 10.)

Dr. Dmytro Hrodzinsky of the Department of Biophysics, Academy of Sciences of Ukraine, who is now lecturing in the U.S., was added to the conference program in view of his years of work on the effects of the Chernobyl accident and his significant research.

"From the first days of the accident I have worked near this monstrous reactor," he told his listeners. "Even

ty among the population; there are increases in the incidence of anemia, chronic gastritis and other digestive diseases; children are born with congenital defects — and the highest levels are in contaminated regions.

Dr. Marples who had just returned from Miensk, capital of Belarus, where he participated in a conference dedicated to problems of Chernobyl, spoke also about widespread radiophobia as an example of the severe psychological stress among the population. He said the causes of this malady are delayed official information, contradictory information from various official sources and the absence of information about the accident and its aftereffects.

Pointing to documentation of a marked increase in thyroid cancers among children, he reported that the highest incidence is in the most contaminated region, the Homiel Oblast, while Viciebsk, a "clean" oblast, has hardly any cases. Leukemia rates also are expected to rise, as the peak for this disease is expected to occur 15 years after the Chernobyl accident.

Furthermore, "the impact of low-level radiation is still being widely debated," Dr. Marples said. Some scientists say it weakens the body's resistance "to the degree that a form of 'Chernobyl AIDS' is prevalent today, whereby the human organism is more susceptible to all kinds of disease."

What is perhaps most disturbing, Dr. Marples continued, is "a general apathy, a view that the future will bring no improvement, and a lack of confidence in authorities. And this is passed on to the children." Thus, in addition to a declining state of health, "a general air of hopelessness prevails" throughout Belarus.

Alexander Burakovsky, a human rights activist and author of "Period of Half Life," addressed the topic of Chernobyl's social effects. "The explosion at Chernobyl," he said, "uncovered the shortcomings of the system and awakened the sleeping. ... It led to the appearance of parties that later worked for the independence of Ukraine." Such was the reaction of the populace to what was seen as "an act of political betrayal by the [Communist] party."

Mr. Burakovsky credited the Chernobyl accident with spurring the Parliament to adopt the July 1990 Declaration of State Sovereignty that proclaimed Ukraine to be a state abiding by non-nuclear principles.

The controlling elite of the country came to be seen as "completely cynical," he continued, and "glasnost was proven to be only for secrets of the past — not

(Continued on page 20)

## CHORNOBYL: THE FIRST DECADE

### *Yale/Columbia conference...*

(Continued from page 19)

secrets of the present."

He concluded by stating that "it was the political hubris of the Soviet leadership that made such an accident as Chernobyl inevitable," and that is why Chernobyl turned out to be "the first step toward dissolution of the USSR."

Ludmilla Thorne of Freedom House added information on the emotional distress experienced by evacuees, not only because of the stress of being uprooted from their homes, but also because of the lack of acceptance in the areas where they were resettled. She pointed out that the evacuees were treated as outsiders and were ostracized, in some cases treated almost like lepers.

As well, Ms. Thorne spoke about the lives of returnees — those who chose to go back to their homes in the exclusion zone. She noted a danger posed by their agricultural activity, as they grow their own food and then sell it at bazaars as close as Kyiv and as far away as Moscow. Thus, food from the contaminated regions makes its way into the homes of unsuspecting buyers.

Dr. Natalia Lakiza-Sachuk, a visiting scholar at Georgetown University, emphasized how the stresses of Chernobyl affect family life, increasing the death rate and decreasing the birth rate. The result, she said, is "a family that does not reproduce itself — a total disruption of demographic development."

Dr. Lakiza-Sachuk reported that Ukraine's birth rate of 10 per 1,000 population is the lowest among the states of the former USSR; its death rate of 14.7 per 1,000 population is the second highest among developed nations. In the period of 1991-1995, Ukraine experienced depopulation of 500,000; Belarus, too, had a negative population growth.

She went on to note dramatic changes in Ukraine in normal reproduction among women of child-bearing age and a massive infertility problem among men age 18-29 — the highest infertility rate in the world. And, she pointed to at least a doubling of still births, congenital defects and perinatal deaths in the post-Chernobyl period.

#### The issue of energy futures

The two afternoon panels at Columbia University focused on energy futures for Ukraine and on overcoming the nuclear legacy. They were chaired, respectively, by Virginia D. Judson, chief energy planning analyst for the State of Connecticut; and Kate Waters of ISAR (formerly the Institute of Soviet-American Relations).

Carol Kessler, senior coordinator of nuclear safety programs at the U.S. Department of State, spoke of the developing U.S.-Ukrainian partnership on energy issues.

"There is nothing more important than the G-7 memorandum of December 20, 1995, that will lead to the closure of Chernobyl," she noted, and then went on to give the details of that document. "It is vital that Ukraine rid itself of the Soviet legacy of Chernobyl and close down this unsafe plant," she underlined.

Ms. Kessler also pointed out that the G-7 had invited President Kuchma to the nuclear safety summit that is to take place in Moscow on April 19-20 in recognition of his role "as a true leader in efforts to improve nuclear safety."

E. Steven Potts, president of Professional Services International Inc., described how Ukraine could better use its energy resources through renovation of existing thermal and hydroelectric plants, reutilization of resources and use of alternative energy sources. He stated that "the future of Ukraine has to be along multiple paths for energy" as he said he is "skeptical that Ukraine can get rid of its reliance on nuclear power, oil and gas in the near term."

He also chided the U.S. for not doing more to help Ukraine in this sphere, noting, "I am chagrined and embarrassed that the Clinton administration has done so little to help post-Chernobyl Ukraine."

Scott Denman, executive director of the Safe Energy Communications Council, spoke out against the use of nuclear power worldwide as "the funds spent on nuclear power far outweigh its usage." Only 7 percent of the world's primary energy and 17 percent of its electricity is provided by nuclear power.

He pointed to worldwide trends which indicate that nuclear power is now falling out of favor. For example, he said, "The debate has now shifted in Europe from whether to close [nuclear power] plants to when to close them." There is a shift in the former USSR and the East bloc as well; at the time of the Chernobyl accident, 65 reactors were under construction, today that number is down to 10, he reported.

The final speaker on the energy futures panel was Dr. Ivan Vyshnevsky, director of the Nuclear Studies

Institute of the Ukrainian Academy of Sciences, who delved into the physical and technical aspects of the Chernobyl accident.

He spoke at length also about the state of the sarcophagus covering the stricken fourth reactor at the Chernobyl plant, which was seen as a temporary structure. A new structure must be erected, he noted, but the cost — some \$1.5 billion (U.S.) — is prohibitive. That is why Ukraine is looking for international assistance, he told his audience.

Dr. Vyshnevsky also gave statistics on nuclear power in Ukraine: today there are five nuclear power plants with 15 reactors and a capacity of 14,000 megawatts; they produce 37 percent of Ukraine's electricity (in the wintertime that proportion increases to 50 percent). Ukraine ranks eighth in the world in terms of its nuclear power capacity.

The final panel of the two-day conference covered the broad topic of overcoming the Soviet nuclear legacy and international response.

Katya Bowers, former director for the Western NIS of the Counterpart Foundation, spoke of her experiences in Ukraine where she saw first hand the poor state of hospitals. She noted that special needs include equipment for early diagnosis of illnesses and good nutrition. Ms. Bowers also pointed out that currently there is very little international aid being provided as interest has waned.

She added that a very hopeful sign for Ukraine is the new phenomenon of non-governmental organizations like the Chernobyl Union, Greenpeace and Green World. "This is a new thing in Ukraine, and they have discovered that they have power" in influencing the government.

Judi Friedman, director of People's Action for Clean Energy, speaking from her perspective as an American activist said, "I believe the Soviet nuclear legacy is not just the result of Soviet oppression, but of government oppression." She commented, "Chernobyl haunts my world view," and the "Soviet nuclear legacy is part of the global nuclear mafia."

Ms. Friedman concluded her remarks by emphasizing that there are viable alternatives to nuclear power, and "these offer hope for future generations."

Alexander Kuzma, director of development for the CCRF, gave some background on the organization. "The Children of Chernobyl Relief Fund took on the challenge posed by Volodymyr Yavorivsky, who sounded the alarm," he said, "We are proud of our achievements, but haunted by the immensity of the Chernobyl disaster," which "will be a challenge for many years to come."

Mr. Kuzma especially underlined the importance of coalition-building, and he cited several examples of unlikely partners successfully working together via informal coalitions toward a common cause.

The final speaker of the panel was Mary Olson, a researcher with the Nuclear Information Resource Service, who put Chernobyl in a worldwide context by noting, "There are 450 operating reactors around the world today, so Chernobyl is an issue of global legacy."

She went on to counter the myth that "nuclear power is safe, cheap and clean," adding emphatically that "Chernobyl proves this is a myth." Another myth she said, is the generally held belief that a Chernobyl accident could happen only in Ukraine and not, say, in the United States.

#### Commemorative address by Rep. Gilman

A special commemorative address was delivered during the conference at Columbia University by Rep. Benjamin Gilman (R-N.Y.), chairman of the House Committee on Foreign Affairs and a longtime supporter of Ukrainian causes, in particular, human rights issues.

It was the New York state Republican who 10 years ago on May 5, just 10 days after accident at Chernobyl, led a small delegation of Ukrainian Americans to the Soviet and Ukrainian SSR Missions to the United Nations. With his intervention, the group tried to obtain more information about the disaster and to offer assistance to its victims.

"Despite the passage of 10 years, the reactor facility at Chernobyl, one of the world's most unsafe nuclear facilities, is still in operation — risking at every minute of every day the recurrence of the kind of deadly accident that happened in 1986. We are compelled to ask how this could be," said Rep. Gilman.

He went on to note that the costs associated with closing the plant are astronomical: "The governments of Ukraine and Belarus simply cannot find the funds to do this at a time when their economies are in a tremendous depression. ...their efforts are inadequate to address the many problems involved in dealing with Chernobyl."

"The outside world must find the means, as difficult as this may be, to help address this important problem." The congressman noted that the U.S. government is helping Ukraine increase the efficiency of energy generation and



Member of Ukraine's Parliament Volodymyr Yavorivsky addresses Columbia University luncheon.

use, to search for new sources of energy, to improve the safety of its nuclear reactors and to set up an international research center outside of Chernobyl. He added that private volunteer organizations are providing assistance to victims of the accident, while the National Cancer Institute is conducting a study on Chernobyl's health effects.

The congressman also called on the Group of Seven industrial countries "to revisit the issue of Chernobyl." Russia, he said, must do more to help, particularly by forgiving "some or all of the energy debt Ukraine owes it"; Belarus "must recognize that meaningful economic reform is the only way that the economy can begin to grow and provide the long-term financial resources to help address its post-Chernobyl problems"; and any Ukrainian officials who believe Chernobyl "can still be used as a bargaining chip for greater aid from the G-7 countries should consider what Ukraine would face if... the concrete sarcophagus over the destroyed reactor were to collapse."

#### Luncheon speakers

During the course of the two-day conference, luncheons were held featuring prominent officials from Ukraine.

At Yale on April 8, the featured speaker was Deputy Prime Minister Kuras. He noted that the date of April 26, 1986, "is now a watershed in our history," and that with the Chernobyl explosion "humanity began to understand not only its vulnerability, but also its responsibility." Quoting the president of Ukraine, Leonid Kuchma, he said, "Chernobyl was a brutal and perhaps final warning to humanity."

He expressed thanks to President Bill Clinton, the U.S. government and American citizens for their aid and concern for the people of Ukraine. In gratitude to Yale University for hosting a conference on the earth-shattering effects of Chernobyl, Mr. Kuras presented a commemorative album published by the Ukrainian government to mark the 10th anniversary of the Chernobyl disaster.

At Columbia, the luncheon presentation was delivered by Volodymyr Yavorivsky, who was introduced by Mr. Kuzma as "one of the pioneers in bringing the truth out about Chernobyl" and the "founding father of the CCRF."

Mr. Yavorivsky, who is a member of the Ukrainian Parliament and the chairman of the Democratic Party of Ukraine, opened by stating, "I am convinced the Chernobyl disaster is a catastrophe of the 21st century, not the 20th. ... Humanity does not comprehend its scale." He added that "people might think it happened a long time ago and that it's over, but I can tell you the real disaster is only beginning."

Consider, for example, he told his audience, the fact that 34 million people get their drinking water from the Dnipro River, and that river today is threatened by Chernobyl.

He reminded his audience that "Ukraine was born at the time the Chernobyl disaster befell it... and Ukraine was left to face it alone."

"We survived four years of silence and lies about Chernobyl," Mr. Yavorivsky said. "This conference shows a completely different approach, one without romanticism, one based on cold pragmatism from the distance of 10 years. You see Chernobyl today the way it should be looked at."





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AUTHORIZED AGENTS

## The new union...

(Continued from page 2)

Mikhail Myasnikovich, will join Russia's Deputy Prime Minister Aleksey Bolshakov working in the presidential residency in Moscow to formulate a common budget.

Immediately after the signing of the agreement, the presidents of the respective countries declared April 2 as a day of popular unity and stated that thereafter that date would be marked as a public holiday. It appears that, theoretically, other CIS countries, such as Kazakhstan and Kyrgyzstan could join the union, and certainly those two states have indicated such a desire over the past two weeks. However, they are unlikely to seek as deep an integration as that engineered by Mr. Lukashenka for Belarus. One month ago, even Russia was expressing reservations about the sort of union envisaged by Mr. Lukashenka. The April 2 agreement does, nevertheless, fall in line with the recent and controversial decision of the Russian Duma to declare the dissolution of the Soviet Union illegal.

There are two key questions:

1. How serious are Belarus and Russia about full integration?

2. What is left of Belarus's Constitution, Parliament and independence as a result of the treaty forming this "Community"?

For Boris Yeltsin, the signing of such a treaty can hardly be divorced from his re-

election campaign for the presidency of Russia. It has already solicited praise from his presidential rivals, Gennadiy Zyuganov and Vladimir Zhirinovskiy, and it has perhaps gone some way to alleviate President Yeltsin's reputation in Russian nationalist circles as a politician who betrayed the USSR, an image still displayed in hardline Communist newspapers. Even moderate Russian politicians appear to favor closer integration. One can say, therefore, that the treaty has satiated to some extent the wishes of the Russian "imperialist" lobby.

President Lukashenka's motives are more difficult to assess. As a politician he has often acted irrationally, and in a dictatorial and high-handed fashion. His venom toward any form of opposition has been manifested frequently of late, and particularly toward the Belarusian Popular Front, which he has equated with German fascism of the wartime variety (this accusation has been somewhat negated by Mr. Lukashenka's own assertion of his admiration for Hitler).

He has long emphasized the fact that he was the only politician in the old Belarusian Parliament to oppose the dissolution of the Soviet Union. Yet his policies have been inconsistent. At times he has appeared to resist Russian intrusions into the Belarusian economy. He has alternately asserted a wish to integrate more closely with Russia than in the Soviet period, and

(Continued on page 23)

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# The new union...

(Continued from page 22)

that any agreement with Russia would not negate Belarusian independence. The most convenient adjective to describe the Belarusian leader would be "unbalanced."

President Lukashenka has entered into this agreement seriously. That he will continue to play a leading role in the long term, however, is unlikely. On March 30, he assured Polish President Alexander Kwasniewski that the treaty did not signify a loss of independence. The treaty itself mentions the continued "sovereignty" of Belarus. Yet the latter can be applied mainly to the formal existence of two states: the recognition of Belarus as a member of the international community; and perhaps with regard to matters such as internal law and order.

In terms of military-security policy, Belarus has been formally integrated with Russia, even to the extent of losing control of its own western border. It remains to be seen – and it is a potentially explosive issue – whether Russian officers will now begin to patrol the southern border with Ukraine. At a time when Poland may be added to the "family" of NATO, Russia has added to its own strategic force by moving its border westward.

### Perspectives

Over the past two weeks, the city of Minsk has seen a series of unprecedented demonstrations, violence, and clashes between protesters and police.

On March 24, a pro-independence demonstration close to Independence Square turned into an ugly clash between the Belarusian Popular Front (BPF) and militia. At least one policeman died of wounds incurred. On March 31, it was the turn of Communists and trade unionists, who staged a large demonstration in favor of the union agreement. The num-

bers involved in both demonstrations have been estimated at around 30,000.

On April 2, the anti-union forces again came out in force, this time without the benefit of an anniversary date and in spite of a ban on such a gathering. About 20,000 demonstrators took to the streets at the behest of the BPF, a party that lost all its parliamentary seats in the recent elections, but which appears to have engendered more unity in the face of a threat to the very existence of a Belarusian state.

The BPF and its leader, Zyanon Paznyak, appealed to President Yeltsin directly not to sign the union treaty. On the eve of the treaty's signing, Mr. Paznyak had traveled to the Ukrainian capital to publicize the Belarusian situation. Certainly he has been harassed at every turn in his own country. On March 26, he was physically prevented from addressing some 600 international delegates at a conference on the 10th anniversary of Chernobyl, organized by the largest independent NGO, the Belarusian Fund for the Children of Chernobyl. His house has reportedly been surrounded by militia.

In turn, Belarusian independentist newspapers have been forced to lead an underground existence. The editor of the parliamentary newspaper Narodnaya Hazeta was recently dismissed, barely a year after coming into office, ostensibly for his failure to offer support for the president's policies. In Minsk, phone-tapping and KGB surveillance have become all too common.

At present, however, Belarus is not merely a poor neighbor of Russia economically, it is also a more repressive state in which privatization and a major foreign presence have yet to be felt. paradoxically, therefore, the treaty may offer Belarusians the best hope for the introduction of more liberal economic and social policies. Yet the price to be paid – the loss of independence – is a high one.

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## PREVIEW OF EVENTS

### CANCELLED

**WASHINGTON:** The commemorative conference on the Chernobyl disaster scheduled for Thursday, April 25, has been cancelled. No further information is available about this event.

### RESCHEDULED

**WASHINGTON:** The ecumenical memorial service for Chernobyl victims scheduled for Saturday, April 27, will now take place on Wednesday, May 1, at St. John's Episcopal Church, Lafayette Square.

### Tuesday, April 23

**PRINCETON, N.J.:** Princeton University Concerts series presents the Odessa Philharmonic Orchestra, Hobart Earle conducting, in a program of Mahler, Ives, Dankevych and Johann Strauss. The concert starts at 8 p.m. in the Richardson Auditorium, Alexander Hall. Tickets: \$27, \$23, \$19; students, \$2. For more information call, (609) 258-5000.

### Thursday - Friday, April 25 - 26

**NEW YORK:** WNYC New York Public Radio, FM 93.9, AM 820, devotes two days' programming to the Chernobyl nuclear disaster and its consequences. Thursday at 7 p.m., WNYC brings to its listeners, live from the United Nations, the Chernobyl Memorial Concert featuring the Odessa Philharmonic Orchestra conducted by Hobart Earle. Friday, WNYC will present informative programming about the disaster and its ramifications.

### Friday, April 26

**CLEVELAND:** The United Ukrainian Organizations of Greater Cleveland invite the community to attend a Chernobyl remembrance ceremony at Chester Commons, starting at 8 p.m. Dr. Robert White will be the guest speaker.

### Friday - Sunday, April 26 - 28

**ROCHESTER, N.Y.:** The United Ukrainian American Committee of Rochester invites the community to a series of events commemorating the 10th anniversary of the Chernobyl disaster. On Friday, a ceremony will take place at the County Office Building, 39 West Main St., at noon. Congresswoman Louise Slaughter and local elected officials will take part in the ceremony. The featured speaker will be Dr. Natalia Fendrikova of the Kyiv Institute of Pediatrics, Obstetrics and Gynecology. An ecumenical requiem liturgy will be held at St. Josaphat Ukrainian Catholic Church, Ridge Road East and Stanton Lane, on Saturday, April 27, at 7 p.m. A candlelight vigil at St. Mary the Protectress Ukrainian Autocephalous Orthodox Church follows on Sunday, April 28, at 4 p.m. For further information call Alex Loj, (716) 723-3445, or Roman Kucil, (716) 467-2377.

### Saturday, April 27

**ABINGTON, Pa.:** The Ukrainian Educational and Cultural Center of Philadelphia invites the public to a benefit concert in memory of the 10th anniversary of the Chernobyl disaster, featuring the Odessa Philharmonic Orchestra and renowned actress Svitlana Vatamaniuk. The concert is at Abington Senior High School, 970 Highland Ave. Program begins at 6:30 p.m. Donation: adults, \$25; seniors/students, \$20; children to age 12, \$10. Sponsors giving \$100 and over will be listed in the program. For tickets, contact the center, 700 Cedar Road, Jenkintown, Pa., (215) 663-1166.

**WOODBIDGE, N.J.:** The Township will conduct a ceremony in tribute to the Ukrainian people who died in the aftermath of the Chernobyl nuclear disaster. The ceremony will take place at 2 p.m. in the Council Chambers of the Municipal Building, 1 Main St. For further information call, (908) 602-6015.

**GARWOOD, N.J.:** A one-hour lecture by Volodymyr Chernousenko on the Chernobyl disaster will be broadcast at 9:05 p.m. on Comcast Cablevision of New Jersey TV-32. Mr. Chernousenko was the director of physics of the Ukrainian Academy of Science and has advised Chernobyl clean-up teams. The program was produced by KONNECTIONS: Alternative News and Views. For additional information call, (908) 789-2199.

### Wednesday, May 1

**CAMBRIDGE, Mass.:** The Harvard Ukrainian Research Institute presents the Vasyi and Maria Petryshyn Memorial Lecture on "The Union of Brest (1596) in its Historical Context," to be delivered by Francis J. Thomson. The program starts at 4 p.m. at the university's Center for European Studies, 27 Kirkland St., lower level conference room. A reception will follow. This event is free and open to the public. For more information call Laura Wayth, (617) 495-4053.

### Friday-Sunday, May 3-5

**CLEVELAND:** Alexis Kochan will conduct an intensive three-day workshop on the Ukrainian folk style of singing for women's voices. All activities will take place on the Case Western Reserve University campus in Cleveland. The workshop will culminate in a recording of the songs prepared before and during the weekend. The workshop is open to all women with strong musical skills and the ability to read Ukrainian. The cost of the workshop is \$60 per participant and will cover recording and copying costs. For further information about this workshop, application materials or to order the 1995 workshop recording, contact Nadia Tarnawsky, (216) 749-0060.

### Saturday, May 4

**MONTREAL:** The Ukrainian Youth Association (CYM) of Montreal invites members and the community to a banquet and zabava featuring Montreal's very own Burlaky. This event is a celebration of the golden anniversary of the renewal of CYM in the diaspora. Tickets: \$45; \$35 before April 20; students: \$25. Location: CYM Hall, 3260 Est. Rue Beaubien. For more information call, (514) 725-1349.

**BALTIMORE:** The Ukrainian National Choir invites the community to a spring dance, at St. Michael Ukrainian Catholic Church, starting at 8 p.m. Music to be provided by Oberehy. For ticket and other information call O. Palijczuk, (410) 828-6922.

### Saturday - Sunday, May 4-5

**GLEN SPEY, N.Y.:** The Middle Atlantic Chapter of the Ukrainian Philatelic and Numismatic Society invites all interested to attend the annual "Zustrich-Meet" at the Verkhovyna Resort. Opportunities for buying, selling and trading items as well as meeting new acquaintances and enthusiasts abound. For room reservations call, (914) 626-1323. Mention the Zustrich-Meet to receive a special rate. Free admission to the trading area during the event.

## "Assassination" tour continues

**NEW YORK** — The Ukrainian Congress Committee of America continues screenings of Oles Yanchuk's "Assassination," a film about the murder of Stepan Bandera, the leader of the Organization of Ukrainian Nationalists.

Four additional screenings have been scheduled:

• Sunday, April 28: New York: Ukrainian National Home, 140 2nd Ave.,

at 4 p.m.

• Saturday, May 4: Washington: Biograph Theater, 2819 M Street NW, at 1 p.m.

• Saturday, May 4: Baltimore: St. Michael Ukrainian Catholic Church, at 6:30 p.m.

• Sunday, May 5: Philadelphia: Ukrainian Cultural Center, 700 Cedar Road, at 4:30 p.m.