SCFS FORUM

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Founded in 1951 as the Los Angeles Chapter of the Federation of American Scientists, the Southern California Federation of Scientists is a non-profit educational organization dedicated to issues affecting SCIENCE, SOCIETY and PUBLIC POLICY. The **FORUM** is intended as a communications vehicle among our members and readers. We hope that our readers will send their comments and debate one another on the issues of the day. Please contact or send all materials to:

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Moving Beyond Nuclear Energy in the Former Soviet Union

— by Bennett Ramberg

(Bennett is Director of Research at the Committee to Bridge the Gap where he administers a project to reduce nuclear energy risks in the Former Soviet Union.)

In the debris left in the wake of the collapse of the Soviet Union and its Eastern European empire lies a decaying civil nuclear energy complex of some sixty reactors that begs international attention and action. Unless host countries restructure their energy profiles away from the poorly designed and operated nuclear plants now in service, the probability of an accident comparable to Chernobyl will remain unacceptably high.

Moving beyond business as usual is, however, likely to be difficult. Where the West took decades to develop the physical plant, financial regulatory and legal infrastructure in place today, the former Soviet Union and Eastern Europe (FSU and EE, otherwise referred to as the East) must telescope the process to reduce nuclear risks. In so doing, the East — which bears principal responsibility for its energy future — must overcome a decaying nuclear energy sector infrastructure, mounting debt, baseless currencies, poorly motivated management, an insufficiently compensated work force and ill-defined legal standards and regulations.

In attempting to address these obstacles, the FSU and Eastern Europe cannot realistically expect the West and international financial institutions to

come to the rescue unless the current political environment changes. While the major industrialized states have made many promises to reduce the risks posed by Soviet nuclear reactors, very modest assistance — e.g. one of the largest U.S. exports are fire trucks to Bulgaria — has resulted in the closure of only one nuclear plant.

Given current inertia, moving the East away from atomic power requires a convincing demonstration of nuclear fragility or implementation of more productive alternatives. Another major accident, a la Chernobyl, would certainly make the first point. But an accident, obviously, is precisely what we wish to avoid. A second path would attempt to wean the East away from nuclear energy through new energy production and conservation. A plan of action could include,.

Western Energy exports that bridge energy shortfalls and reliance on the most dangerous reactors buying time until the East implements non nuclear measures, e.g. conservation, energy efficiency, refurbishment of the fossil fuel sector.

Western untility and industrial co-venturing with Eastern counterparts to move the FSU and EE away from nuclear reliance.

Energy efficiency showcase projects supported by Western government and public education.

NGO political action to induce Eastern and Western governments to expand their commitment to reconfigure the East's energy profile.

To move this agenda forward, in April 1996 Committee to Bridge the Gap, with technical support from the Sacramento Municipal Utility District, initiated an effort to establish an energy efficiency showcase in Nikolav, Ukraine. Situated along the Black Sea, Nikolav is a city of 600,000 inhabitants. Being a center of Soviet naval ship building, it was a "closed" city during the Cold War.

Bridge the Gap's initiative demonstrates some of the pitfalls in attempting to implement technology transfer to the FSU. Our action plan calls for application of demand side management to a small zone occupied by military retiree apartments and administrative facilities. We partnered with a Ukranian entrepreneur who, we were told, had an agreement with the Ministry of Defense to provide energy services. Because he could invest energy savings in a factory he wished to build on the zone, We hound a party who had significant incentives to demonstrate savings. Success will allow replication to the larger city as well as other regions across the country. To establish the potential for energy savings, we hired a Ukrainian energy auditing firm.

At the time of this writing, the project has hit several serious snags. First, we only learned well into our effort that the entrepreneur's "agreement" with the military was not a binding contract; it was hostage to politics in the Ministry of Defense. Unless consummated, we will not have a zone within which to work. Second, the energy audit — which suffers from inadequate baseline data — indicates that while the zone wastes significant amounts of power due to inefficient lighting, boilers, steam lines as well as an absence of thermostats and metering, residents are energy starved. An undersupply of steam —which is leaking from the delivery system— fails to heat consumer apartments. As a result, even the base commander suffers: he has to rely on his cooking stove to provide winter warmth. The upshot is that improved energy services resulting from conservation efforts, e.g. sealing steam lines, may actually increase energy consumption. Then there is the matter of financing. The military is having difficulty generally in paying its energy bills. It is questionable whether zone retirees on a fixed income can pay for additional service. Further, international lenders may be leery about investing in the showcase because promised collateral —municipal buildings— may not be considered meaningful.

The Bridge the Gap project marks an important test case of one avenue to reduce nuclear risks. At this point, its success remains uncertain. ###

ATHEISTS AND SCIENCE

--- by Kenneth H. Bonnell,
Co-president, Atheists United

The most important thing about atheism is that is that it is an end product of deductive reasoning akin to that used in science. Most of AU's members went through the process of inventing their atheism by comparing the reality of their lives with what they were taught in Sunday school and church (or the Jewish equivalent). This has often been a solitary process. "I didn't know there were others like me!" represents the kind of statement our Venice Beach and Sunset Junction Street Fair staffers hear.

The average atheist was raised in a religious family and went to childhood religious instruction and to religious services. The family language included references to the objects of the religion — the "God," if Christian the "Christ" — as though they were part of objective reality.

Often what opened the eyes of the future atheist was exposure to science, its ideas and discoveries. These did not correspond to what had been taught in their religion. Often it was the conflict between science and Bible stories, the "creation," "Noah's Ark," the "miracle" stories of the "exodus" and of the "cures" by Jesus.

Others were turned from viewing religion as "good" by reading the history of Europe with the Crusades, the Inquisition, the bloody wars between competing religious sects and nations, and the suppression of scientific discoveries in the name of religion. Some, mainly women, came to see how women were suppressed by church leaders relying on the doctrines found in the Bible. Many black atheists found religious support for slavery obnoxious, and have seen black churches as a tool for keeping blacks in segregation.

Once the questioning process has started (and getting it started is often a problem), it leads to seeing the claims for religion as based on wishful thinking. One wants to be told by unimpeachable authority that what one wants will be given, just for the act of believing. We have found that "just believing" comes with a lot of theological baggage all that must be accepted on faith and none that can be verified by scientific inquiry.

When an atheist is approached by a believer who wants the atheist to "believe," the answer is the one that every good scientist requires: "Show me the evidence!" ###

"I love hearing that lonesome wail of the train whistle as the magnitude of the frequency of the wave changes due to the Doppler effect."

SCFS Task Group Reports....

Economic Conversion

Congressional peace stalwarts like Bernie Sanders, Ron Dellums, Pat Schroeder, Barbara Boxer, and George Brown have had zero response to the SCFS paper on the economic conversion subject. Not only that but Sanders and Dellums were actually "leaned on" by the author, and they still couldn't respond with a single solitary comment, let alone acknowledge the communication as is their custom and practice.

One bit of rationale for such negative response was presented during a discussion on the remilitarizing of Japan. As we all know, Japan recovered from WWII and prospered perhaps more than any other nation because they were not saddled with unproductive military expenditures. One would think that Japanese leaders would be adamantly opposed to any kind of wasteful military build-up.

In view of this logical rationale not being the case, i.e. Japan is busy remilitarizing today, the idea was proposed that industrial corporations require a strong military back-up force in order to prevail in their international dealings. If this is so for Japan, then it certainly follows that it must be so for the U.S. also. The question is then whether or not multinational corporations still require a strong military force as they did earlier in the century.

The counter argument to this conclusion is that the multinationals have such far flung economic ties, investments, and worldwide control that military support is no longer necessary. Nicaragua, Iraq, and China are three differing examples. Nicaragua shows that U.S. military might was simply not needed. Iraq shows that overwhelming military action adds nothing to the basic U.S. economic influence and control. China, on the other hand, shows that in some cases the U.S. military is simply totally irrelevant and useless.

At any rate, this idea of military need by the multinationals warrants a little more thought that what is presented here. There has to be some good reason liberal legislators are so reluctant to engage the Pentagon in political battle. SCFS has shown rather conclusively that the industrial part of the military-industrial complex is, or at least can be, separated from the generals and admirals in the Pentagon.

Nuclear Waste Into Space ?

The SCFS paper "Disposal of High-Level Nuclear Waste" provided a ball park calculation for Apollo-type spacecraft transport of our long term nuclear garbage. Conclusions were that about 10,000 such spacecraft would be required for U.S. military waste plus another 10,000 for present commercial waste. Then another 20,000 would be required for the nuclear waste from the rest of the world. Recently a very astute engineering friend of the author expressed disagreement with our conclusions that such disposal was much beyond our economic and technical capabilities. Thus further analysis was undertaken with more ball park calculations.

Given the presently available Delta rocket which costs $62M and possesses a maximum rated payload of 3K lbs, neglecting the fact that a working payload into outer space might be much smaller, the equivalent cost of an Apollo-type spacecraft with a 17K lbs payload would be $350M each. Thus the total cost for the waste disposal program would be $14T. This huge number neglects the safety problem of an occasional launch pad or atmospheric blow-up. Additionally, there might be some added launching costs which would be compensated for by a possible saving from mass production, the ball park calculations remaining unchanged.

SCFS Task Group Reports....

Conclusions at this time are just what we said in the first place that waste disposal into outer space are beyond our present capabilities. However, it should be kept in mind that at some time in the future, these cost/safety problems might be mitigated in some new and presently unforeseen manner. Thus once again, the proposed MMRS technique for present storage of high-level nuclear waste is the disposal technique of choice even though it is not really very satisfactory

Editors note:

The Nuclear Age Peace Foundation in Santa Barbara has published a slightly modified version of the SCFS paper "Disposal of High-Level Nuclear Waste" as their Global Security Study No. 23. Authors are Jim Warf and Shel Plotkin. Anyone desiring a copy of that publication, please contact the office.

INFOMED Computers for Cuba

News* Not *Fit to Print in the LA Times

The INFOMED computers, 395 in total, bound for Cuba and confiscated by the U.S. Government were finally released July 19, 1996. This occurred after some two months of fasting by a group from Pastors for Peace. However, rather than release the computers to PFP, they were actually given to the United Methodists, a supporting organization and representative of the religious community. Then it took another two months of negotiation by the United Council of Churches to finally make arrangements for the actual crossing of the Mexican border, so Cuba could pick up their computers .

On September 13, the delivery took place in Havana with Fidel, himself, bestowing "hero" medals on the PFP fast participants. Dave Wald, the U.S. INFOMED Project coordinator was there with a large group of supporters. Of interest is the Cuban health system advances over the years. With one of the most advanced medical communication systems now in place and operational, Cuba still occupies the position of having the leading medical system in the world. (Our only comment on this aspect is that it is too bad that Cuba's energy system development is among the worst in the world with no apparent chance of developing a truly sustainable system. SCFS has tried as have indigenous NGO organizations, but Cuba has been incapable of responding.)

Now that the groundwork has been laid and apparently the U.S. Government has decided not to hassle the huge religious community's response to Cuba's medical needs, we can go back to the collecting of computers. Cuba still needs more. Of particular concern is their obtaining 386 models or newer if possible, but the older 286 and XT models are also desired. There is now a computer technician available in LA to screen and store the units we collect.

SCFS members are encouraged to "beat the bushes" for more used IBM-type computers for INFOMED use. Please note that these are tax-deductible contributions through SCFS, so call the office if you have any or want to talk about the project.

SCFS in Europe

Without boring you with details, Dr. Josephine Stein now represents SCFS in the International Network of Engineers and Scientists, INES, which is based in Germany. When the technical program was being planned by David Krieger (from Nuclear Age Peace Foundation) for the INES Amsterdam conference, he invited SCFS to present our last two papers on economics and nuclear waste disposal. The European trek not being convenient at the time of the conference, the thought occurred that perhaps Josie Stein, our stalwart member in London, might be a representative for us. This would make it convenient for us to participate in the group's activities in the future should we so choose. Fortunately, Josie was already an active individual member of INES.

SCFS Task Group Reports....

The other European science oriented organization dealing with important technical issues is the World Federation of Scientific Workers, Roger Dittmann being an active member. Our SCFS problem has been the pro-nuclear power stance of the WFSW in spite of Roger's valiant efforts to change their outlook. On the other hand, INES is vehemently anti-nuclear — both bombs and power – so SCFS joined that group.

It is rather incongruous that with the dearth of SCFS organization activities here, we are expanding activities elsewhere. Although Josie was already an active member, previous commitments prevented her from attending the Amsterdam conference this year. Next year things should be different.

Rocketdyne Cleanup Coalition

The Rocketdyne Cleanup Coalition, SCFS's most active task group, has switched gears and has initiated the group's third objective, oversight of the Rocketdyne cleanup of the Santa Susana Field Lab. Shutting down the nuclear energy operations, the first objective, and is now simply waiting for the final release of the epidemiology study, the second objective, makes us feel very good about the possible influence a community group can have on government and corporation behavior, actually misbehavior.

TAX REFORM

A synopsis of the 7/10/96 Midnight Special Bookstore lecture by John Bachar and Paul O'Lague on "The Flat Tax" is in preparation. This publication will contain not only the material distributed last July at the lecture, but also some additional material not generally realized about our tax structure. Of significance is the tax reform proposal which uses Adjusted Gross Income rather than Net Income for taxing purposes. This proposal reduces the taxes on poor people while increasing that on people making more than $250K per year. This tax increase on the super rich is still far

Midnight Special Bookstore Lecture Series

Tuesday, February 11, 1997, 7:30 pm
"UN and the New Scientific Order"
by Roger Dittmann

Tuesday, March 11, 1997, 7:30 pm
"Rocketdyne Epidemiology Study: Experiences of the Rocketdyne Cleanup Coalition"
by Dan Hirsch

Tuesday, April 8, 1997, 7:30 pm
"Preventing Breast Cancer"
by Joel Swarz

"I won? I didn't even know there was a Nobel booby prize."

below that applicable during the Roosevelt administrations and also some what less than that applicable during the Carter administration. Results will show an increase in government income sufficient to provide the jobs programs specified in our SCFS 9/10/96 MSB lecture on Economic Conversion and Jobs.

VIETNAM WIND ENERGY

A U.S. wind energy entrepreneur interested in our SCFS Vietnam project has been contacted. He has a spare, used 60kW unit that can be used for a pilot program in Vietnam. Unfortunately, we cannot do this by ourselves but require the assistance and cooperation from Vietnam to provide connecting transmission lines, power transformers, and a power purchasing agreement. As some readers may know, the central Vietnam Government lacks the funds to actually provide the services normally expected from central governments. Thus the provinces in Vietnam have assumed responsibilities that would normally be left to Hanoi.

The SCFS problems here have to do with how to function in this rather unstructured environment as well as compete with large industrial corporations from all over the world for Vietnam government attention. Our project leader, Paul Vu, is the SCFS interface in that he can deal with our Vietnam counterparts in Vietnamese. At present, we are waiting for a response to our proposal for installation of a demonstration turbine at an east coast village that needs the energy.

Economically, only private capital seems to be available and that requires a ten year payback period for any initial loans. Unfortunately, there are few wind energy sites whose energy resources are sufficient to meet this private capital requirement.

In the U.S. there are a growing number of wealthier communities that are also environmentally concerned. These communities can then pay extra money for their electric power and pay off a wind turbine. In the long run, these communities will have a quantity of very inexpensive electric power after the turbine is paid off, so the community itself will own the turbine. Needless to say, they will still require the utility company because of the inherent unreliability of wind energy.

EXPERIMENTAL BREEDER REACTOR IN IDAHO

This paper by Jim Warf has already been completed but we're waiting for the tax reform paper mentioned above to be complete. Plans call for both papers to be mailed to members at the same time in order to minimize postage costs.

Please help the **Southern California Federation of Scientists** provide the scientific and technical knowledge that will enable the public and it's officials to better understand the issues affecting science, society and public policy.

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