



Vintage Agnew

June 15, 1966

talk to Army group

... It does seem to me that with all the basic information we don't know, with all the problems in which we are involved, with all the deficiencies that exist in the world, that a scientist should in some degree . . . stick his head out of his office or his laboratory, whether he is a first year lab assistant or last year's Nobel laureate, and ask himself . . . Is the problem I'm working on one of those whose solution might directly help my colleagues or my fellow countrymen right now or in the future? If the scientist doesn't know, it is probably because in his narrow pursuit of his particular field he actually doesn't know what is going on around him. He may not have taken the time to even find out, or worse, he doesn't want to. This attitude worries me very much.

July 8, 1970

talk entitled Tactical Nuclear Operations

In the last 20 years we and other nations have been engaged in numerous arguments which resulted in physical combat. The political and military approach to these confrontations has been to rely on conventional weapons systems. Although we pretend to have a tactical nuclear capability, we have no doctrine for carrying out tactical nuclear warfare, nor do we seem interested in developing a tactical nuclear capability. Yet, if properly structured, it could conceivably deter these lesser wars—or at least make our forces more effective if they are challenged

Let me take as an example a particular military target in North Vietnam: the Thanh Hoa Bridge. This bridge is about 540 feet long. For military reasons we decided it had to be destroyed. . . .

We flew 657 strike sorties. In addition we employed approximately 300 supporting sorties. We dropped [2.5] million pounds of bombs, we lost 9 aircraft. In addition three optically guided Walleyes were launched at the bridge. Each of the Walleyes actually hit the bridge but the 750 pound warheads were insufficient to seriously damage it. We never were able to collapse a single span. Present rumors state that the bridge doesn't exist but is simply painted on the water. . . .

Had [the] Walleyes carried a [subkiloton] nuclear warhead. . . such as at long last is being provided in the Mk-72, the bridge would have been put out of action. Instead of expending 2.5×10^6 pounds of high explosive in about 700 sorties, the mission could have been accomplished with at most *two* strike sorties and a few cover aircraft The collateral damage from [such] a ground [nuclear] burst . . . would be. . . negligible compared to that actually imposed with conventional explosives as currently delivered with free fall bombs. . . . [Moreover] burial to optimum depth (which maximizes cratering effects and minimizes fallout) is feasible with devices now under development.

July 13, 1971

talk to the National Classification Management Society

Almost my whole professional career has been involved with technical work which has had a running battle with classification. To be very frank with you I've never won an argument with a classification officer and I've never understood why I've continued to lose. . . .

In spite of our country's background in freedom. . . we all know there is a tremendous amount of secrecy and classification involved in government and private industry. Some of it is certainly warranted and will always be required if we are to have a competitive capitalistic industry. But there comes a time when secrets are no longer secrets and impedances imposed by secrecy or classification are no longer warranted. . . .

[For example] I believe that the philosophy or concept of embargoes on materials, products, and technology in today's world is archaic. . . . In fact. . . if the intent of the embargo concept [as embodied in the Battle Act of 195 1] was to guarantee U.S. conventional military superiority it has failed. . . .

Not so long ago the President announced that he was going to attempt to open trade with China. I don't believe there is a person here who doesn't believe that is a splendid idea. But, . . . to pacify our basic fears, which I believe are no longer warranted, the White House quickly stated that of course we wouldn't allow the export of commercial jet aircraft or diesel locomotives. . . which the White House then stated that China very much wanted. . . . Do we really believe that in 1971 a nation of 750 million people shouldn't have commercial jet aircraft? . . . Do we believe that if they don't purchase them from us they won't be able to buy them from France or even Russia? Do we really believe that having jet commercial aircraft will jeopardize the security of the U.S.?. . .

Providing China with a modern airline with aircraft, ground equipment, airfield and navigational aids would be a real shot in the arm for our economy. We ought to sell what we can. . . . Why should ping pong players have to ride in DC-3's or coal burning locomotives?

February 4, 1976

Chemical reactions give a few electron volts per interacting atom. Fission gives two hundred million electron volts per reacting nucleus. This factor of a hundred million has a favorable impact not only on the energy produced but also on the environment with regard to the amount of raw materials required and the wastes produced. A thousand megawatt coal plant produces six million cubic feet of ash per year, a fission plant less than a cubic yard.

Sooner or later the whole world will realize that they cannot turn their backs on the benefits of the nucleus. Today fission, hopefully in the next century fusion.

paper presented at the
Annual Joint Meeting of the
American Physical Society
and the American Association
of Physics Teachers

April 14, 1977

... [Most of] the world's population. . . [has] great expectations. Part of their expectations are due to the sort of instant discontent that we through the media have been beaming for many, many years. They expect in a very short time to achieve a standard of living that's commensurate with ours, and I would submit that we're not going to achieve this standard of living unless they have plentiful relatively inexpensive energy. This can be provided, but. . . only. . . through what I'll call technology. It's not going to be achieved through wishful thinking or abstinence in certain technologies.

talk at Belgium American
Chamber of Commerce Luncheon
in honor of Dr. Agnew

April 19, 1977

. . . I do not believe we can maintain a technology base or the necessary cadre of first-class scientists and engineers to enable the USA to have a nuclear weapons design capability for more than a few years if testing ceases.

letter to Congressman Jack F. Kemp

September 8, 1977

. . . If it is the considered opinion of the Senate that the United States has no further needs now or in the future for new untested types of warheads having yields substantially greater than the 150 kilotons limit of this agreement, then the [threshold test ban] treaty [under consideration] will have no appreciable impact on our defense posture in the immediate future. However, if you believe that there will be requirements far new untested designs of yields considerably larger than 150 kilotons, then if this treaty is ratified our defense systems will eventually have to bear a penalty in payload weight, physical size, and perhaps even in the additional use of fissile materials. . . . It simply will not be prudent to put into the stockpile designs which represent a large extrapolation from tested designs...

testimony before
Senate Foreign Relations Committee

I personally would not support any treaty further limiting nuclear testing until meaningful agreements on SALT and Mutual Balanced Reduction of Forces have been ratified. . . . I stress this relation to other arms control progress because we need some clear sign of Soviet restraint in their weapons build-ups and because our own nuclear posture must be appraised as a consistent whole. . . .

For those of you who may wish to remind me of the destruction caused by a nominal 15 kiloton bomb, may I remind you that I flew on the Hiroshima mission and have participated in the major thermonuclear tests which this country has conducted. As an aside, I firmly believe that if every five years the world's major political leaders were required to witness the in-air detonation of a multimegaton warhead, progress on meaningful arms control measures would be speeded up appreciably,

October 2, 1977

talk at 1977 National Conference
for Advancement of Research

I still remember when Seamans took over the AEC, he said, "ERDA will not be a warmed over AEC." He was right; except for the weapons program and a few other areas, it became a half-baked NASA . . . I believe the dismal track record of ERDA was due to the lack of appreciation of how fundamental [our] basic but relevant research is to the successful implementation of any development or engineering project. . . .

Hopefully, this attitude will not prevail [in] the DOE [under Schlesinger] . . . because of [his] past attitude when he was with the AEC. For tens of years under the most absurd secrecy . . . the AEC had been conducting research on centrifuges. Their engineering was superb, but their basic understanding . . . of how centrifuges really work, which involves complicated fluid dynamics, was lacking. After Schlesinger came on board. . . he simply directed that the weapons people, with their advanced, basic science capabilities in . . . fluid dynamics, be brought into the program. In a few months . . . the weapon design theorists attacked the problem, developed codes to analyze the action of the gas inside the centrifuge, and allowed the centrifuge to become a viable option. . . for uranium enrichment. Had Schlesinger not broken down the compartmentalization. . . the centrifuge developers would still be using an Edisonian, build-and-try technique with a six months turnaround time. . . .

Many people don't realize the . . . stimulus given to major scientific programs in the U.S. today, which started from work initiated through the weapon's supporting research program of the AEC Some originating at Los Alamos are:

1. SHERWOOD - controlled thermonuclear fusion
2. LAMPF - medium energy physics facility
3. ROVER - nuclear rocket research
4. LASER FUSION
5. JUMPER - laser isotope separation
6. VELA - nuclear test detection
7. SMES/SPTL - cryo-engineering
8. NUCLEAR SAFEGUARDS
9. GEOTHERMAL ENERGY

. . . the support of basic science is vital to any development work; it can't be programmed and micromanaged. It must be supported as if it were one of the art forms, which it really is.

However, one can insist in these trying times, where we are confronted with specific problems, that for the most part research be conducted in relevant fields, but not that it be necessarily relevant today If one does not provide this freedom and enlightened management, then the country will end up with the run-of-the-mill, average, plodding, pseudo-research institutions, which will be busy supplying the last digit after the decimal point that is so dear to the handbook publishers. The innovative wild men and women who are always on the leading edge of science and technology will not be part of the team, And we need them.

1954

State Senate campaign slogan

"A person of integrity stays bought!"