

128609

*142 Br...*

MAR 13 46 AM

TP 3971

FROM BRADBURY CLEAR CREEK

MARCH 46 13 15 45 28

NET/WIN

MAR 13 46 AM

TO GENERAL GROVES WASHINGTON LIAISON OFC WASH DC

MESSAGE ROOM

R U S H

R U S H

R U S H



PROFESSOR HANS BETHE, DEPARTMENT OF PHYSICS,  
CORNELL UNIVERSITY, ITHACA, N Y

326 US ATOMIC ENERGY COMMISSION

Location LANL

Collection *FBI/NER*

Folder *353 Crossroads Radiological Measurement*

DEAR PROFESSOR BETHE.,

THERE ARE CERTAIN FEATURES OF THE APPROACHING TESTS OF THE ATOMIC BOMB BY THE NAVY WHICH WORRY ME, AND I AM WRITING TO FIND WHETHER THERE ARE FACTORS WHICH I HAVE OVERLOOKED, OR WHETHER YOU CAN THROW ANY FRESH LIGHT ON THE SITUATION IN GENERAL.

OF COURSE I HAVE TO LOOK AT THE SITUATION AS AN OUTSIDER. HOWEVER, FROM THE VANTAGE POINT OF AN OUTSIDER CERTAIN FEATURES MAY APPEAR IN DIFFERENT PERSPECTIVE THAN TO ANE CLOSER BY.

WHAT IS WORRYING ME IS THE POSSIBILITY THAT IF THE BOMB IS EXPLODED. IN THE OCEAN THE HYDROGEN MAY BE CONVERTED TO HELIUM WITH AN ASTRONOMICAL RELEASE OF ENERGY. IF THE ONLY CONISDERATION WAS THE ENERGY RELATIONS, THE REACTION WOULD RUN. THE ARGUMENT THAT THE REACTION WILL NOT RUN MUST INVOLVE OTHER CONSIDERATIONS. AS FAR AS I CAN SEE THESE OTHER CONSIDERATIONS MUST BE CONSIDERATIONS OF DETAIL, SUCH, FOR EXAMPLE, AS THAT THE SIMULTANEOUS COLLISION OF FOUR HYDROGENS IS AN EVENT OF TOO GREAT IMPROBABILITY. WHATEVER THE

COPIED/DOE  
LANL RG

*26*

SECRETARY STATE

STATE DEPARTMENT

OFFICE OF THE SECRETARY

PRECISE ARGUMENT IT WOULD SEEM THAT IT MUST BE OF THE GENERAL FORM THAT NO KNOWN OR CONCEIVABLE PROCESS HAS SUFFICIENT PROBABILITY TO PERMIT THE REACTION. BUT THIS IS ESSENTIALLY AN ARGUMENT FROM IGNORANCE, AND INVOLVES A TERRIBLY LONG RANGE EXTRAPOLATION. IF THE HISTORY OF PHYSICS TEACHES ANY ONE THING, IT IS THAT LONG RANGE EXTRAPOLATIONS AND HAZARDOUS., ., EVEN THE BEST HUMAN INTELLECT AS NOT IMAGINATION ENOUGH TO ENVISAGE WHAT MIGHT HAPPEN WHEN WE PUSH FAR INTO NEW TERRITORIES IN THE PRESENT SITUATION THE HAZARD OF SUCH AN EXTRAPLOATION IS MADE MORE VIVID BY THE RECENT ARTIFICIAL PRODUCTION OF MESONS OF VARIOUS MASSES WHEN ENERGIES ARE PUSHED TO NEW HIGH VALUES.

TO AN OUTSIDER THE TACTICS OF THE ARGUMENT WHICH WOULD JUSTIFY RUNNING EVEN THE SLIGHTEST RISK OF SUCH A COLLOSAL CATASTROPHE APPEARS EXCEEDINGLY WEAK. IT SEEMS TO ME THAT EVERYTHING POSSIBLE SHOULD BE DONE TO MINIMIZE THE RISK. I WOULD LIKE TO SEE PRELIMINARY EXPERIMENTS IN WHICH A BOMB IS EXPLODED IN ISOLATED MASSES OF WATER OF LIMITED SIZE, AS IN A WATER TANK OR SMALL POND.

THERE IS ANOTHER ASPECT WHICH SHOULD BE CONSIDERED. WHAT THE RIGHT COURSE OF ACTION IS IS DETERMINED BY WHAT WE KNOW NOW, NOT BY HOW THE EVENT ACTUALLY TURNS OUT. IF I AM RIGHT IN THINKING THAT THE TACTICS OF THE ARGUMENT IS WEAK, THEN IT WOULD BE WRONG TO DROP THE BOMB WHETHER OR NOT THE OCEAN EXPLODES. SUPPOSE THE BOMB IS DROPPED

COPIED/DOE  
LANL RC

26

DEPARTMENT STAI

STAT BRANS

ST BRANS

AS AT PRESENT PLANNED, THE OCEAN DOES NOT EXPLODE, AND THAT LATER IT SHOULD BECOME KNOWN TO THE GENERAL PUBLIC THAT THE ARGUMENT HAD BEEN WEAK AND THAT THE SCIENTISTS HAD PERMITTED THE TAKING OF A STUPENDOUS CHANCE WITHOUT DOING EVERYTHING IN THEIR POWER TO SAFEGUARD ALL POSSIBILITIES. THERE MIGHT WELL BE A REACTION AGAINST SCIENCE IN GENERAL WHICH WOULD RESULT IN SUPPRESSION OF ALL SCIENTIFIC FREEDOM AND THE DESTRUCTION OF SCIENCE ITSELF. THIS APPEARS TO ME AS CAUSE FOR GREATER CONCERN THAN THE BLOWING UP OF THE OCEAN, WHICH AFTER ALL WOULD NOT VERY MUCH AFFECT A WORLD OF DEAD MEN.

ARE THERE CONSIDERATIONS OF WHICH I AM NOT AWARE, OR WHICH I HAVE OVERLOOKED QUESTION

YOURS SINCERELY,

P W BRIDGMAN

REF TP 3971

CORR.....22ND LINE 2 MD WD SHLD BE ARE - ALSO 24TH LINE 5TH WD SHLD BE TERRITORY.

END WIN

PLS DELIVER IMMEDIATELY-----

COPIED/DO  
LANL RC

28