

4-24-1981

Magnetohydrodynamics CDIF (Component Development and Integration Facility) Dedication

Max S. Baucus

Let us know how access to this document benefits you.

Follow this and additional works at: https://scholarworks.umt.edu/baucus_speeches

Recommended Citation

Baucus, Max S., "Magnetohydrodynamics CDIF (Component Development and Integration Facility) Dedication" (April 24, 1981). *Max S. Baucus Speeches*. 168.
https://scholarworks.umt.edu/baucus_speeches/168

This Speech is brought to you for free and open access by the Archives and Special Collections at ScholarWorks at University of Montana. It has been accepted for inclusion in Max S. Baucus Speeches by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.

Printing, Graphics & Direct Mail
ONBASE SYSTEM
Indexing Form

Senator * or Department*: **BAUCUS**

Instructions:

Prepare one form for insertion at the beginning of each record series.

Prepare and insert additional forms at points that you want to index.

For example: at the beginning of a new folder, briefing book, topic, project, or date sequence.

Record Type*: **Speeches & Remarks**

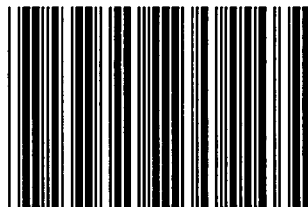
April-1981

_____ **Magneto hydrodynamics CDIF Dedication**

(select subject from controlled vocabulary, if your office has one)

_____ **04/24/1981**

CLICK TO PRINT



BAUCUS

REMARKS OF
SENATOR MAX BAUCUS
AT THE MAGNETOHYDRODYNAMICS CDIF DEDICATION

APRIL 24, 1981

12 All of us

I STAND HERE, PROUD TO BE A SMALL PART OF THE PROGRESS BEING MADE IN DEVELOPING MHD TECHNOLOGY. AND I CAN'T HELP THINKING OF SOMETHING ONCE SAID BY ANOTHER PERSON WHO HAD AN EXTREMELY SIGNIFICANT ROLE IN ~~ENERGY RESEARCH~~ ENERGY RESEARCH:

MARIE CURIE WAS AWARDED THE NOBEL PRICE IN PHYSICS IN 1903 AND A SECOND ONE IN CHEMISTRY IN 1911. HER DISCOVERIES IN RADIOACTIVITY HELPED LEAD TO A WHOLE NEW, EXCITING, AND PERHAPS MORE DANGEROUS WORLD.

MARIE CURIE ONCE SAID, "NOTHING IN LIFE IS TO BE FEARED. IT IS ONLY TO BE UNDERSTOOD."

I HESITATE TO DISAGREE WITH THIS EMINENT HISTORICAL FIGURE WHEN IT COMES TO ~~ENERGY RESEARCH~~ ENERGY RESEARCH, BUT I DOUBT MARIE CURIE EVER HAD TO DEAL WITH DAVID STOCKMAN.

CRACKING THE ATOM IS CHILD'S PLAY COMPARED TO CRACKING THE OFFICE OF MANAGEMENT AND BUDGET.

WE ALL KNOW THAT THESE ARE DIFFICULT TIMES FOR MHD RESEARCH. THE SAD FACT IS THAT THESE DIFFICULT TIMES ARE NOT THE RESULT OF TECHNOLOGICAL OR ENGINEERING PROBLEMS; THEY ARE THE RESULT OF POLITICAL DECISIONS BEING MADE THOUSANDS OF MILES AWAY.

I DON'T THINK I NEED TO TELL ANYONE HERE OF THE IMPORTANCE OF MHD RESEARCH TO THE NATION AND TO COAL-RICH AREAS, ~~IN PARTICULAR~~. I CAN ONLY SAY THAT ALL OF YOU HAVE A RIGHT TO BE PROUD OF YOUR WORK -- PROUD OF ITS IMPORTANCE TO ~~OUR~~ ^{OUR} COUNTRY, PROUD OF ITS IMPORTANCE TO MONTANA, AND PROUD OF ITS IMPORTANCE TO SCIENCE.

LESS THAN TWO WEEKS AGO, MANKIND TOOK ANOTHER IMPORTANT STEP TOWARDS UNDERSTANDING THE COSMOS. AS THE COLUMBIA MADE ITS NEAR FLAWLESS JOURNEY, ALL OF US ONCE AGAIN WERE REMINDED OF BOTH THE ADVANCES IN UNDERSTANDING ~~BEING MADE~~ AND THE ADVANCES IN ENGINEERING ~~BEING DEMONSTRATED~~.

IN TRUTH, EACH OF US REACHES MORE OF OUR INDIVIDUAL POTENTIAL AS PART OF THE HUMAN SPECIES WHENEVER OUR ENGINEERING ~~ADVANCES~~ ^{MENTS} ~~ACHIEVE~~ - ALLOW US TO FEEL THE AWE AND SHARE THE SPIRIT OF THE HUMAN ADVENTURE.

INDEED, IT IS THE APPLICATION OF SCIENCE -- THE CONNECTION BETWEEN SCIENTIFIC UNDERSTANDING AND THE UTILIZATION OF NEW TOOLS -- THAT MARKS THE PROGRESS OF MANKIND.

AND THIS IS WHAT YOUR WORK IS ALL ABOUT.

~~OUR COUNTRY HAS~~ ^{OUR COUNTRY HAS}
~~THE PEOPLE OF THE UNITED STATES HAVE~~ [^] INVESTED WELL OVER \$400 MILLION IN MHD RESEARCH. LAST YEAR, ~~RESEARCH~~ AT LEAST 21 STATES TOOK PART IN ~~THIS RESEARCH~~.

~~To give you a better idea of how complex a project such as~~
~~this is, let me list for you the states in which I am aware of~~
 IMPORTANT MHD ACTIVITY ^{OCCURRED} ~~TAKING PLACE~~ ^{IN} LAST YEAR: ALABAMA, ARKANSAS,
 CALIFORNIA, CONNECTICUT, IDAHO, ILLINOIS, KANSAS, MASSACHUSETTS,
 MINNESOTA, MISSISSIPPI, MISSOURI, NEW HAMPSHIRE, NEW YORK, NORTH
 CAROLINA, OHIO, PENNSYLVANIA, TENNESSEE, TEXAS, WASHINGTON, THE
 DISTRICT OF COLUMBIA, AND, OF COURSE, MONTANA.

~~YOU ARE PART OF AN IMPORTANT NATIONAL EFFORT. IT IS AN
 ACHIEVEMENT OF OUR SOCIETY THAT WE ARE SO WELL ORGANIZED THAT ALL
 OF THESE INDEPENDENT EFFORTS CAN BE COORDINATED SO AS TO PRODUCE
 THE ACHIEVEMENT WE ADDRESS TODAY.~~

THESE EFFORTS ARE PRODUCING POSITIVE RESULTS!

LAST YEAR, THE GENERAL ACCOUNTING OFFICE REPORTED TO CONGRESS
 THAT MHD IS A PROMISING TECHNOLOGY. "PROMISING" IS GAO'S TERM, NOT
 MINE. THIS IS SIGNIFICANT PRAISE COMING FROM A SOURCE KNOWN MORE
 FOR ITS CRITICISMS OF FEDERAL PROGRAMS THAN FOR ITS ~~PRaise~~ PRAISE.

AND, GAO IS NOT THE ONLY SOURCE OF PRAISE FOR MHD DEVELOPMENT.
 SUCH DIVERSE ELEMENTS AS THE MONTANA POWER COMPANY AND THE SOVIET
 UNION ARE WILLING TO PUT THEIR VIGOROUS SUPPORT BEHIND THIS WORK.

BELIEFS

I KNOW OF FEW OTHER ~~THINGS~~ [^] THAT JOE MACELWAIN AND LEONID
 BREZHNEV HAVE IN COMMON.

*In the
 Jerry
 Plunkett*

THE AMERICAN UTILITY INDUSTRY IS A STRONG CHAMPION OF MHD. THE UTILITY INDUSTRY SUPPORTS MHD NOT JUST BECAUSE ~~IT GETS~~ ^{MHD} OVER 13 PERCENT MORE ENERGY OUT OF COAL BEING USED TO GENERATE ELECTRICITY; NOT JUST BECAUSE IT ~~SAVES~~ ^{SAVES} UP TO A FOURTH OF THE COST OF PRODUCING COAL-FIRED POWER; NOT JUST BECAUSE IT ~~SAVES~~ ^{SAVES} ELECTRICITY CONSUMERS OVER \$20 BILLION PER YEAR; NOT JUST BECAUSE IT OFFERS ELECTRICITY GENERATION WITH MUCH LOWER NITRIC OXIDE AND SULPHUR DIOXIDE EMISSIONS TO POLLUTE OUR AIR; AND NOT JUST BECAUSE THE CRITICAL WATER MHD SAVES WILL GIVE THE INDUSTRY SO MUCH MORE FLEXIBILITY WITH SITING POWER PLANTS.

THESE ARE ALL IMPORTANT REASONS BEHIND THE SOLID INDUSTRY SUPPORT FOR MHD. BUT IN ADDITION, THE INDUSTRY KNOWS THAT ~~OTHER~~ ^{MHD} ~~IMPORTANT RESEARCH ALSO ONGOING WILL NOT DO ONE JOB THAT NEEDS TO BE DONE~~ -- PROVIDES MORE EFFICIENT BASELOAD POWER ~~FROM OUR COAL RESOURCE.~~

FUEL CELL RESEARCH AND HIGH TEMPERATURE GAS TURBINES ARE OFTEN OFFERED AS ALTERNATIVES TO MHD. THIS RESEARCH IS ONGOING AND MAY PROVE HELPFUL IN PROVIDING PEAKING POWER. BUT THESE TECHNOLOGIES OFFER LITTLE HELP IN SUPPLYING THE CONTINUOUS LARGE QUANTITIES OF STEADY ELECTRICITY THE NATION'S COAL-FIRED GENERATING CAPACITY MUST PROVIDE. FURTHER, IF THESE TECHNOLOGIES ARE TO USE COAL, THE COAL MUST FIRST BE GASIFIED. AND I KNOW OF NO ONE WHO BELIEVES THAT ONCE THIS GASIFICATION IS CONSIDERED, THESE OTHER TECHNOLOGIES EVEN COME CLOSE TO OFFERING THE EFFICIENCY AND CLEANLINESS BEING OFFERED BY MHD.

SO THE SUPPORT OF THE UTILITY INDUSTRY IS BASED ON THE SAME BASIC CONCEPT THAT SHOULD CAUSE CONGRESS TO SUPPORT MHD RESEARCH: WHEN ALL IS SAID AND DONE, NO MATTER WHAT ELSE OCCURS OVER THE NEXT SEVERAL DECADES, WE KNOW WE WILL NEED ELECTRICITY GENERATED FROM COAL. AND, MHD OFFERS THE ONLY WAY WE ARE LIKELY TO BE ABLE TO GET MORE ~~EFFICIENT~~ ENERGY, MORE CLEANLY AND MORE CHEAPLY FROM THE COAL WE ARE CERTAIN TO BURN.

SO WHAT IS THE PROBLEM?

SINCE MHD IS SO PROMISING,

~~IF THE UTILITY INDUSTRY SO STRONGLY SUPPORTS YOUR WORK, IF THE COUNTRY SO CLEARLY NEEDS MORE EFFICIENT COAL-BASED ELECTRICITY, IF THE ENGINEERING IS PROGRESSING SO WELL, AND IF THE COUNTRY HAS ALREADY COMMITTED OVER \$400 MILLION,~~ A RATIONAL PERSON MUST ASK WHY WE NOW ARE FACED WITH SUCH AN EXTREMELY STRONG BATTLE WITH THE OFFICE OF MANAGEMENT AND BUDGET; WHY MHD RESEARCH FUNDING IS NOW IN GREATER JEOPARDY THAN IT HAS BEEN SINCE THE ONSET OF THE PROGRAM.

I WISH I HAD GOOD RATIONAL ANSWERS FOR YOU: WE LIKE TO BELIEVE THAT OUR GOVERNMENT IS RATIONAL. I DO NOT HAVE THESE ANSWERS BECAUSE THE OFFICE OF MANAGEMENT AND BUDGET IS NOT ACTING RATIONALLY ON MHD.

UNDER THE REAGAN ADMINISTRATION, OMB HAS DEVELOPED FOUR, ~~FACTORS~~, CRITERIA FOR DETERMINING WHEN THE GOVERNMENT SHOULD GIVE SUPPORT TO A RESEARCH EFFORT -- ~~AN~~ ATTEMPT TO BASE DECISIONS ON SOUND PLANNING.

FIRST, OMB SAYS THE RESEARCH EFFORT SHOULD BE ONE WITH UNIQUE GOVERNMENT FACILITIES. LOOKING AROUND ME, I THINK IT IS FAIRLY EVIDENT THAT MHD MEETS THIS CRITERIA. BESIDES THE FACILITY HEAR IN BUTTE, THERE ARE OTHER MHD FACILITIES, SUCH AS THE ONE IN TENNESSEE, THAT ALSO FIT THIS CRITERIA.

SECOND, OMB SAYS THE GOVERNMENT SHOULD SUPPORT RESEARCH EFFORTS ONLY THROUGH THE PROCESS DEVELOPMENT UNIT STAGE. MHD RESEARCH AT THIS TIME CLEARLY FITS THIS CRITERIA AS WELL.

THIRD, OMB SAYS THE GOVERNMENT SHOULD SUPPORT LONG-TERM, HIGH-RISK EFFORTS. THE IDEA HERE IS THAT THE PRIVATE SECTOR CANNOT BE EXPECTED TO PICK UP RISKY RESEARCH VENTURES UNTIL ENOUGH IS KNOWN TO JUSTIFY PROCEEDING WITH STOCKHOLDERS' MONEY. ~~THEY ARE NOT~~
~~DETERMINED FROM SUCH RESEARCH, BUT NO ONE INDUSTRY CAN BE EXPECTED~~
~~TO PICK UP THE RESEARCH.~~

MHD FITS THIS CRITERIA AS WELL.

I MIGHT POINT OUT THAT WE HAVE AN INDUSTRY, INDEED HERE IN MONTANA WE HAVE A COMPANY, MONTANA POWER, THAT IS EAGER TO USE MHD AND HELP COMMERCIALIZE IT ONCE WE ARE TO THAT POINT. BUT WE ARE NOT TO THAT POINT YET.

~~FURTHER, OF ALL INDUSTRIES, PERHAPS THE ELECTRICAL UTILITY INDUSTRY IS IN THE WORST SHAPE TO TAKE HIGH RISKS ON EARLY STAGES OF NEW TECHNOLOGY. FIRST, THE INDUSTRY IS REGULATED AND CANNOT RISK CONSUMERS' MONEY ON UNTESTED IDEAS. SECONDLY, WHEN YOU ARE~~

PROVIDING A COMMODITY AS VITAL AS ELECTRICITY, MAJOR SCALE-UPS OF A TECHNOLOGY RISK THE POTENTIAL OF SHUT-DOWNS AND POWER SHORTAGES. THEREFORE, ANY UTILITY INDUSTRY INVOLVEMENT MUST COME AT A LATER STAGE OF MHD DEVELOPMENT.

THE INDUSTRY IS WAITING ONLY FOR THAT TIME WHEN IT CAN UTILIZE THE PRESENTLY HIGH-RISK TECHNOLOGY IN A PRUDENT WAY.

FINALLY, OMB'S FOURTH CRITERION IS THAT THE RESEARCH MUST OFFER THE POTENTIAL OF A HIGH PAYOFF. I HAVE ALREADY DISCUSSED THIS, AND ONCE AGAIN MHD FITS THE OMB CRITERIA. MHD OFFERS THE POTENTIAL FOR IMMENSE BENEFITS, FOR A VERY, VERY HIGH PAYOFF FOR BOTH THE SOCIETY AND FOR ELECTRICAL CONSUMERS.

So, OMB HAS SUGGESTED FOUR CRITERIA, AND MHD MEETS ALL FOUR.

THIS IS WHY I BELIEVE OMB IS NOT ACTING RATIONALLY: IT IS PEOPLE AT OMB -- NOT ENERGY EXPERTS, NOT THE DEPARTMENT OF ENERGY, NOT MHD'S POTENTIAL USERS IN THE INDUSTRY -- BUT POLITICAL PEOPLE AT OMB MAKING ^{IRRATIONAL} ~~THE~~ DECISIONS.

AND, LEST YOU THINK THAT THE TERMINATION OF MHD RESEARCH BEING REQUESTED BY THE REAGAN ADMINISTRATION IS PART OF THE PRESIDENT'S PACKAGE OF BUDGET CUTS, AND THAT SUCH SACRIFICES IN EVEN THE BEST PROGRAMS ARE NEEDED IN A TIME WHEN AN AUSTERE BUDGET IS NECESSARY, THIS ALSO IS NOT TRUE.

IT IS TRUE THAT THE TERMINATION OF MHD IS PART OF THE BUDGET SENT TO CONGRESS BY THE PRESIDENT'S OFFICE OF MANAGEMENT AND BUDGET. IT IS ALSO TRUE THAT SACRIFICE IN ALL PROGRAMS IS NECESSARY IF WE ARE TO KEEP THE BUDGET IN LINE.

BUT THIS IS NOT JUST SACRIFICE; IT IS TERMINATION. THE PRESIDENT HAS CALLED ON US ALL TO SACRIFICE; HE HAS CALLED FOR EVEN-HANDED SACRIFICES DISTRIBUTED FAIRLY ACROSS THE ENTIRE FEDERAL BUDGET.

BUT OMB HAS REJECTED THIS CONCEPT WITH REGARD TO MHD. WHILE IT WOULD TERMINATE FUNDING FOR MHD, IT HAS INCREASED FUNDING ELSEWHERE. THREE-FOURTHS OF ALL FEDERAL SPENDING WAS EXEMPTED FROM ANY CUTS BY THE REAGAN OFFICE OF MANAGEMENT AND BUDGET. OMB HAS ASKED FOR INCREASES OVER CURRENT SPENDING LEVELS IN MANY AREAS. WITHIN THE ENERGY AREA, IT HAS ASKED THAT SOME EFFORTS BE TERMINATED WHILE ASKING THAT FUNDING IN OTHER AREAS BE INCREASED.

TECHNOLOGICAL PROBLEMS

SO MHD'S BUDGET PROBLEMS ARE NOT THE RESULT OF ~~BAD WORK~~ ~~YOU~~ ~~ARE~~ ~~DOING~~ ~~HERE~~. THEY ARE NOT THE RESULT OF A RATIONAL PLANNING PROCESS AT OMB. THEY ARE NOT EVEN PART OF THE PRESIDENT'S REQUEST FOR EVEN-HANDED SACRIFICES IN ALL FEDERAL PROGRAMS.

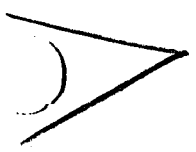
MHD'S PROBLEMS ARE THE RESULT OF BUDGET EXPERTS REPLACING ENERGY EXPERTS IN MAKING ENERGY POLICY. UNDER THE NAME OF BUDGET CUTS, PEOPLE WHO KNOW NOTHING ABOUT ENERGY ARE ATTEMPTING TO TOTALLY RESHAPE OUR ENERGY SPENDING PRIORITIES. I ~~SUBMIT THAT~~ ~~IF~~ ~~YOU~~ ~~GAVE~~ ~~THE~~ ~~DEPARTMENT~~ ~~OF~~ ~~ENERGY~~ ~~A~~ ~~TOTAL~~ ~~AMOUNT~~ ~~IT~~ ~~COULD~~ ~~SPEND~~ ~~NOT~~ ~~OMB~~ ~~WERE~~ ~~TO~~ ~~DECIDE~~ ...

ON ENERGY, MHD WOULD RECEIVE SIGNIFICANT FUNDING NEXT YEAR.

SO NOW THE DECISION IS BEFORE CONGRESS, AND THE WORK TO SAVE MHD WILL CONTINUE TO BE VERY, VERY DIFFICULT.

IT GOES WITHOUT SAYING THAT YOUR WORK WILL CONTINUE TO HAVE THE FULL SUPPORT OF THE MONTANA CONGRESSIONAL DELEGATION AND OF THE PEOPLE OF ~~YOUR~~ ^{OUR} STATE.

YOU HAVE EARNED THIS SUPPORT, AND THIS NATIONAL EFFORT HAS EARNED THE SUPPORT OF YOUR COUNTRY. OUR JOB IS TO EDUCATE AND PERSUADE. WE WILL DO OUR BEST.



REFERRED TO

WHEN I BEGAN MY REMARKS, I ~~MENTIONED SOME WORDS OF~~ ^{THE} MARIE CURIE. LET ME CONCLUDE BY ~~PARAPHRASING SOME WORDS OF~~ ^{IMPORTANT} ANOTHER HISTORIC FIGURE ~~TO~~ ^A ~~THE~~ ENERGY TECHNOLOGY.

THOMAS EDISON ONCE SAID THAT, "THE INVENTOR TRIES TO MEET THE DEMAND OF A CRAZY CIVILIZATION." I WILL TAKE THIS A STEP FURTHER: THE MHD ENGINEER THESE DAYS TRIES TO MEET THE DEMANDS OF A CRAZY BUDGETING PROCESS.

I HOPE WE IN CONGRESS CAN DO AS WELL ENGINEERING OUR POLITICAL PROCESS AS ALL OF YOU HAVE ~~DOING~~ ^{IN} ENGINEERING MICHAEL FARADAY'S IDEA FOR A BETTER WAY OF GETTING ENERGY UTILIZING A MAGNETIC FIELD.