

HAARP ROOTS

THE BEGINNING

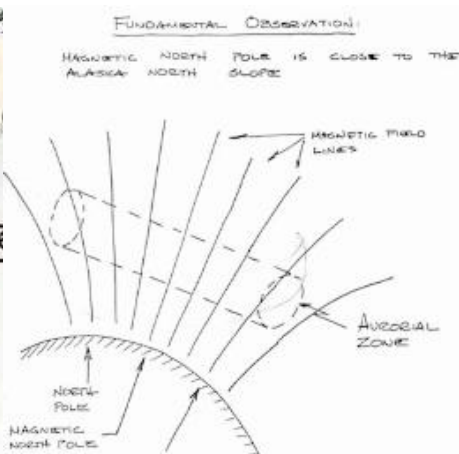
Dr. Eastlund was approached by ARCO in the Spring of 1984, and asked to invent an idea that could lead to the sale of the 23 trillion cubic feet of natural gas in the Prudhoe Bay formation on the North Slope of Alaska. He presented a concept for using the gas to power a large phased array electromagnetic generator and produce a missile shield to defend the United States from missile attack by the Soviet Union. Many other ideas for applications were developed and most of them are detailed in the ROADMAP. Many of these ideas are part of the present DARPA managed HAARP program.

THE FIRST PRESENTATION

The first report was presented to an ARCO Vice President on May 9, 1984. When Eastlund presented the third slide in the presentation, he was abruptly asked to leave the room. A half hour later, he was asked back in the room. The Vice President told him that " He was concerned about what he might say, as the concept was so exciting." He then detailed the process by which he would present the idea to ARCO management. To ensure that history recognized his contribution, the Vice President provided the documentation on the right.

ARCO BRIEFING SLIDES

The first three slides of the briefing subsequently given to ARCO management are shown below. This in-house ARCO presentation phase culminated in a meeting with Bob Anderson and ARCO's decision to have Simon Ramo work with Eastlund on presentations to the DOD and preparation of patents.



ITEM	ENERGY (Joules)
200CF Natural Gas	3×10^{13}
Total Geomagnetic Energy	8×10^{17}
1.4 MW Input	6×10^{15}

ENERGY REQUIREMENT ESTIMATES FOR POTENTIAL APPLICATIONS	
Communications Disruptions	$10^{11} - 10^{14}$
Satellite Submarine Surveillance Disruption	$10^{15} - 10^{19}$
Anti-Missile Shield	80G
EMP Modification	10^{18}
Geophysical Exploration	10^9 Watts

ARCO Proprietary Information
 ROBERT L. HIRSCH
 ALASKA NORTH SLOPE
 ARCO
 Proprietary


FIRST JASON BRIEFING

The JASONS, a DOD think tank, was briefed on the concept and the letter below resulted.

CONCEPTS PRESENTED TO JASONS

POTENTIAL APPLICATIONS

- o MILITARY
 - o Communications
 - o Disruption of Communications
 - o Satellite submarine surveillance disruption
 - o Anti-Missile Shields
 - o EMP Modification
- o Geophysical Exploration
- o Weather Modification
- o Environmental Modification
- o Nuclear Winter Cleanup



THE UNDER SECRETARY OF DEFENSE
 WASHINGTON, D.C. 20301
 17 DEC 1984

RESEARCH AND ENGINEERING

Dr. Robert L. Hirsch
 ARCO Oil and Gas Company
 Exploration and Production Research
 Post Office Box 2819
 Dallas, Texas 75221

Dear Dr. Hirsch:

Thank you for presenting your ideas on the use of North Slope energy resources for atmospheric, ionospheric and magnetospheric modification experiments to the JASONS. The briefings by Dr. B. J. Eastlund, Dr. T. K. Perkins and yourself to the JASONS' Dr. David Hamner and Dr. Francis Perkins were well received. In their evaluation letter of 17 October they state that "certain of the ideas dealing with creating large amounts of plasma in the auroral ionosphere for... weapons effects simulation are worthy of various consideration, and may merit the investment of some DoD seed money in the form of a feasibility study contract."

I have passed your ideas and the JASON evaluation on to technical experts in the Defense Advanced Research Projects Agency (DARPA) and the Defense Nuclear Agency (DNA) for consideration in the context of our needs, funding, and current research programs. I urge you to contact Dr. Tony Tether, Director of DARPA's Strategic Technology Office (phone 202-694-1701), and Dr. Marv Atkins, Deputy Director, DNA (phone 703-325-7300) so that we may work together to make your ideas quantitative, well documented proposals for experiments.

I thank you for your interest and initiative in this area, and hope that we may be able jointly, to develop a program that will be of value to our nation.

Sincerely,

James P. Wade, Jr.
 James P. Wade, Jr.
 Acting

copy to: Dr. Francis Perkins
 Dr. David Hamner
 Dr. Marv Atkins

ARCO Proprietary

HISTORY PREPARED BY ARCO EXECUTIVE

In November, 1987, an ARCO executive prepared an internal history of the subsequent events after the Eastlund briefing in May, 1984.

Internal Correspondence

DRAFT 11/20/87


Date: November 20, 1987

Subject: **APTI HISTORY**

From/Location: R. L. Hirsch

Telephone: 754-6811

To/Location: B. J. Eastlund



I've put together a brief history of APTI for a forthcoming review (attached). I'd appreciate any comments you might have. We can't lengthen it much. Did I miss anything?

[Signature]

Robert L. Hirsch
 RLH:ba

Attachments

cc: R. A. Shanny

3/83 - Hirsch approached Eastlund challenging him to develop innovative ideas for the use of North Slope Gas.

5/84 - Eastlund presented Hirsch with a 35 page report entitled "Novel Uses of North Slope Natural Gas."

Hirsch presented ideas to Kleschnick, Wycoff, Cox, Simpson, and Heinze. Referred to Simon Ramo for evaluation and guidance.

6/84 - Ramo is enthusiastic and urges an aggressive patent approach.

8/84 - First DOD briefing to Dr. Richard DeLauer, Deputy Secretary of Defense.

2/85 - First DARPA proposal submitted - Alaska North Slope Electric Missile System (ANSEMS).

4/85 - "North Slope Gas Concepts" briefing presented to Dr. Gerald Yonas, Chief Scientist, SDIO.

- 11/85 - "Massive Ground Based Electromagnetic Energy for Space Applications" presented to the Forecast II Air Force panel.
- Continuous - New ideas/variations are conceived by various consultants.

DRAFT 11/30/87

- 1/86 - Hirsch presents management options to Cook, Wycoff, Mut, Ramo, and Heinze. APTI formation approved. Initial Board members: Heinze, Ramo and Hirsch.
- 2/86 - DARPA contract awarded at a level of \$300,000.
- 6/86 - APTI Board Meeting. Robert L. Hirsch elected Chairman of the Board of Directors and Chief Executive Officer. William McMillian elected to the Board.
- 7/86 - Two-day technical review meeting with about 12 consultants and ARCO employees at the LaJolla offices of SAIC.
- First DOD JASON advisory committee review.
- 8/86 - "Ionosphere and Magnetosphere Modification and Ground to Space Power Beaming" presentation to Dr. Donald Hicks, Deputy Secretary of Defense.
- 9/86 - Rany A. Shanny elected President APTI, starts work as first full-time employee in loan space in ARCO's Washington, D.C. office.
- 12/86 - Proposal entitled "Investigate the Creation of Artificial Ionospheric Mirrors (AIMS) and Their Applications" submitted to Air Force Geophysics Laboratory (AFGL).

DRAFT 11/30/87

- Continuous - New ideas/concepts are conceived by various consultants.
- 2/87 - Hirsch briefs Atlantic Richfield Board on APTI. Obtains security clearance waiver.
- 3/87 - Visit to view GE's OTH facility, Bangor, Maine by Hirsch, Shanny, and others.
- 4/87 - APTI Board Meeting in Los Angeles.
- Final report submitted on first DARPA contract.
- 5/87 - Facility clearance granted for Washington office of APTI
- 7/87 - High Energy Electron Discrimination System (HEEDS) proposal submitted to U.S. Army Strategic Defense Command.
- 8/87 - "Ionospheric Warfare" briefing to special DOD office.
- Air Force Contract signed for \$775,919 for a one year feasibility study of artificial ionization mirrors (AIM) for over-the-horizon (OTH) radar.
- 9/87 - DARPA contract awarded for applications of RF/Microwave energy beamed from ground to space. Funding of \$732,376 over 12 month effort.

- 10/87 - APTI staff level: 13
- 11/87 - Notification that the "Ionospheric Warfare" proposal is to be funded.
- Continuous - New ideas/concepts are conceived by consultants and employees

