

MINUTES OF THE MEETING
NATURAL RESOURCES
MONTANA STATE SENATE

April 7, 1977

The thirty-sixth meeting of the Natural Resources Committee was called to order by Senator Elmer Flynn, Chairman at 9:30 a. m. on the above date in Room 405 of the State Capitol Building.

ROLL CALL: Upon roll call all members were present except Senators Dover, Galt, and Jergeson. Mr. Larry Weinberg, Staff Attorney from the Legislative Council, was also present.

CONSIDERATION OF HJR 94: A Joint Resolution of the Senate and the House of Representatives of the State of Montana requesting Federal funding in the amount of \$86 million for the National Magnetohydrodynamic Energy Extraction Program.

Representative Mike Cooney, Chief Sponsor of HJR 94, stated that this Resolution commends Congress for the efforts they have made on the MHD project and asks them to continue their support. I hope that you concur with this Resolution.

After brief discussion, motion was made by Senator Smith and seconded by Senator Manley that House Joint Resolution 94 BE CONCURRED IN. Motion carried unanimously.

Representative Cooney stated, that either Senator Healy or Senator Peterson would carry the bill.

ADJOURNMENT: The meeting was adjourned at 10:00 a. m.



SENATOR ELMER FLYNN, CHAIRMAN

ROLL CALL

NATURAL RESOURCES COMMITTEE

45th LEGISLATIVE SESSION - - 1977

Date _____

4-7-27

[illegible]

STANDING COMMITTEE REPORT

.....April 7.....19 77.....

MR. PRESIDENT.....

We, your committee on.....NATURAL RESOURCES.....

having had under consideration.....HOUSE JOINT RESOLUTION.....Bill No. 94.....

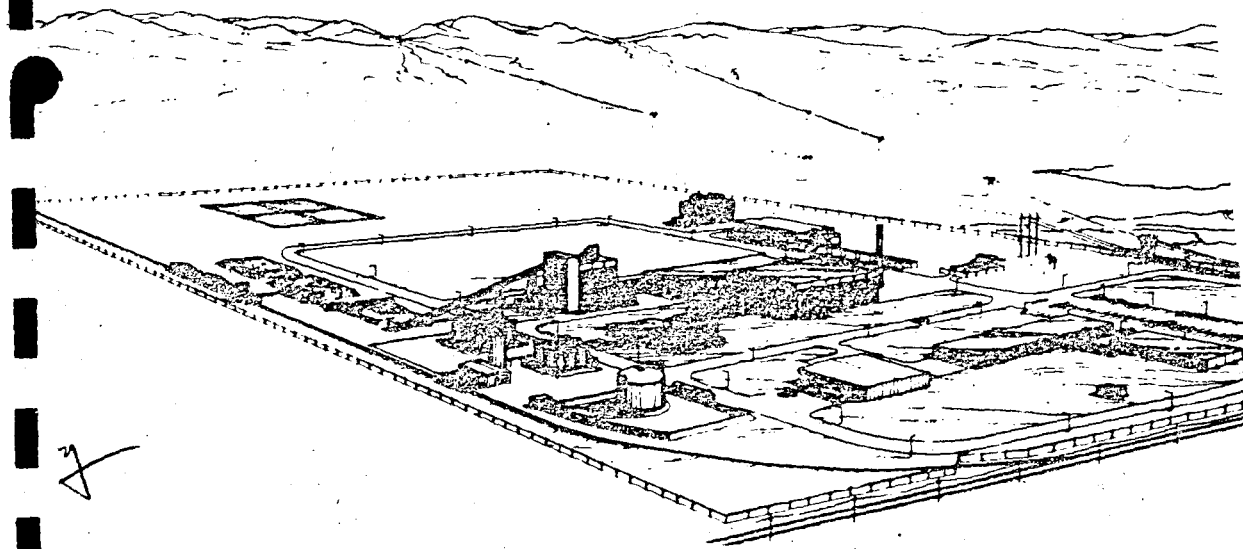
Respectfully report as follows: That.....HOUSE JOINT RESOLUTION.....Bill No. 94,.....

BE CONCURRED IN

AND PASSED

Elmer Flynn
SENATOR ELMER FLYNN

Chairman.



MHD PROJECT — This artist's sketch shows the \$50 million Component Development and Integration Facility being built seven miles south of Butte beneath the Basin Creek Reservoir. The office building and warehouse have been completed. The rest of the

facility that will test MHD systems mid-1978. Some 130 construction workers are working on the project.

MHD spells economic up

By Richard Kaudy
The Montana Standard

BUTTE (AP) — A process that generates electricity from coal, called magnetohydrodynamics (MHD), could spell environmental quality and economic development.

MHD squeezes more electricity from a pound of coal than do conventional electrical conversion processes.

It also could be less polluting than conventional plants.

But the process must be shown to work over extended periods before the electric utility industry will invest in it. Because perfecting MHD generation could take \$2 billion and 15 years, officials, the federal government is subsidizing research.

Federal officials ask \$86 million for the national program but congress so far has authorized giving only \$50 million. A subcommittee early in March increased the MHD funding limit to \$65 million.

Program officials say MHD deserves the money because the 1975 Energy Conversion Alternatives Study showed MHD having higher efficiency at lower costs than alternative processes.

Like turbine generators which use conductors to generate electricity but in MHD hot gas replaces the wire. The coal gas is heated by mixing pulverized coal with hot air.

Heating the air and containing the hot gases, or plasma, that reach nearly 5,000-degrees Fahrenheit are but two difficulties confounding researchers.

Other MHD problems:

—Determining which sizes of coal chunks burn hottest.

—Designing generators so slag, similar to a molten glass, will not corrode coal-feed ducts and combustion chamber walls.

—Finding burners able to remove most of the slag that accumulates as a by-product.

—Converting direct current generated to alternating current used by households.

—Developing a "super-magnet" able to generate the electricity.

—Demonstrating MHD operation over long time periods.

"That is the crux of the problem," according to Dr. Vernon Griffiths, who heads the MHD research program at Montana Tech in Butte.

"If we want to persuade the utilities to adopt MHD generation, we have to show they can provide electricity to customers on a reliable basis," Griffiths said.

The process is highly efficient because the hot gas leaving the magnetic chamber is used to heat conventional steam-turbine generators after initial generation.

Dr. Jerry Plunkett, director of the MHD Research Institute at Butte, suggests using that steam heat for homes or factories that may be built near the plant.

The major benefit nationally from MHD, Plunkett says, is its energy efficiency.

MHD, for example, generates nearly

twice as much electricity from a pound of coal than do conventional coal-burner generators.

Because of its promise, Plunkett says "MHD is a high-risk, high-payoff technology."

Direct benefits will come from hiring construction workers to build the facilities being funded by the Energy Research and Development Administration.

Fueling Butte's economic revival will be indirect benefits, or "spin-offs" from the technology, such as small industries moving to the state.

Such spinoffs already include the National Center for Appropriate Technology at Butte.

NCAT, funded by a \$3 million federal grant, will focus on creating jobs for low-income persons and helping them become more self-reliant in terms of energy use. The center stresses using renewable energy sources, such as solar and wind, so people can build their own energy devices cheaply.

Although heralded as an economic savior to Butte, the MHD program and its benefits have not been sufficient to offset the 1,700 layoffs by the Anaconda Co. since 1974.

The research institute plans to staff the Butte facility at 100-150 technicians through the mid-1980s but now employs only about 60 persons who work on various research projects unrelated to MHD.

Because MHD plants in the United States have operated for only a few minutes, they must be demonstrated to run on coal for months at a time before the utility

**Winning name
gets award**

Energy Village is the new name of the former Valley Mall complex located in Butte.