

MINUTES OF THE SELECT COMMITTEE ON WATER
MARCH 19, 1981

The Select Committee on Water convened at 1 p.m. in Room 436 of the Capitol on March 19, 1981 with CHAIRMAN AUDREY ROTH presiding. All members were present except REPRESENTATIVES BRIGGS and KEMMIS who were absent.

SB 470.

SENATOR STIMATZ said this is a "dam" bill dealing with inspection of dams. The Statement of Intent clarifies the meaning, he said. If this law isn't passed, the federal government will regulate Montana's high-hazard dams, according to the Senator. He pointed out that the definition of high-hazard dams is on page 5, line 20.

PROPONENTS:

GARY FRITZ, DNRC, presented written testimony in favor of the bill (EXHIBIT I).

JOHN MORRISON, of Morrison-Maierle, representing the Consulting Engineering Council said the bill "ties down" the authority on the dams built in the state. In the last few months, he said, the federal government authorized a review of dams throughout the state. He distributed a letter from Harold Eagle, president of the Consulting Engineers Council, in support of the bill. (EXHIBIT II)

ROGER FOSTER, an engineer with Morrison-Maierle of Helena, said that engineers have a responsibility to the public in avoiding dam failures. He said that out of 3500 dams in the state about 110 fall under the high-hazard category. MR. FOSTER said that dams that were soundly designed and built have deteriorated to the point of being unsafe. This bill will give the DNRC the authority to see that the dams are safe by periodic inspections. The state is completing its assessment of dams and has sent reports to owners reporting the condition. The DNRC has the responsibility for dam safety, but doesn't have the authority. He presented copies of a magazine article about dam safety. (EXHIBIT III)

MIKE KEENE, associate director of HKM Associates, said that he had sent committee members a copy of a letter earlier in March regarding his views of SB 470 and telling them why it should be passed. He felt that a permit process should be required, and the state doesn't have the mechanism to do that at the present, he stated. Montanans must consider whether they want state or federal control.

TOM HONZEL representing County Attorneys in Montana, said he is unaware of any specific cases at the present time, but felt they could occur at any time. He said the county attorney would probably have to call upon the DNRC for assistance in handling cases of this sort. He felt the bill would allow for the county attorneys to be involved in hearings of this type, but would give the main authority to the DNRC.

OPPONENTS:

EVELYN JOPPA, representing herself, said that virtually every dam would fall under the category of a high-hazard dam, or be harmful to some one or something. She presented written testimony. (EXHIBIT IV)

QUESTIONS FROM THE COMMITTEE:

REP. CURTISS asked why there was no fiscal note. MR. FRITZ said that one had been prepared for the Senate, but that it was never officially processed, he thought. He had copies which he distributed to the committee.

REP. CURTISS asked MR. MORRISON if he was a consultant for the DNRC. MR. MORRISON said that he was.

REP. CURTISS asked MR. KEENE the same question. He replied yes.

REP. CONROY asked if the fiscal note had been added into the DNRC budget. MR. FRITZ said it had not.

REP. ASAY said that there are provisions for the safety to be challenged, but that he could see no means of appeal for the owner of a dam. MR. FRITZ said there is none stated, but he thought it was obvious that it was available through the Administration Producers Act and the district courts.

TED DONEY agreed there could be appeal through the courts.

REP. THOFT asked who would provide the inspection engineer. MR. FRITZ said the owner of the dam.

REP. THOFT asked how the DNRC is involved at present. MR. FRITZ said the department has no authority to issue the permit, but can be involved in the actual construction of the dam in a monitoring capacity.

REP. THOFT asked if a dam was found to be faulty upon inspection, would this bill give the DNRC the authority, to demand that it be made safe. MR. FRITZ answered that it would.

REP. CONROY asked if the DNRC would be hiring engineers. MR. FRITZ answered they would be hiring civil and hydraulic engineers.

REP. CONROY asked if these engineers couldn't be contracted. MR. FRITZ said that some could, but not all.

REP. CONROY said people with expertise would be constructing high-hazard dams. He wondered why the state would need to duplicate this expertise.

MR. FRITZ said that in the case of larger, more complicated dams, consultants would probably be called in. But, in most cases, the staff engineers would be able to handle the inspections.

REP. CONROY asked if the department would be able to compete with private industry in the area of salaries for these engineers. MR. FRITZ felt that they could. At present, they have 3 very qualified engineers that could probably take care of most of the inspections, but will probably call in consultants from time to time.

REP. NEUMAN asked if the feds would still inspect high-hazard dams if the DNRC inspects them. MR. FRITZ said that the feds would inspect only their own dams, regulated by the Federal Energy Regulatory Commission, not state dams or privately owned ones.

REP. NEUMAN referred to outlets and drains mentioned in subsection (2) and asked if that would include stockwater dams of less than 50 acre-feet. If a complaint was received, could the DNRC require the owner to breach the dam? MR. FRITZ said yes, if it was determined to be necessary. He said that there are presently 110 high-hazard unsafe dams in the state.

REP. ASAY asked if this bill would exclude the federal government from inspecting and setting standards for inspection. MR. FRITZ said, under this program, the state would set the criteria. He commented on the Burnt Fork dam where the feds set one set of standards and the SCS (Soil Conservation Service) sets another.

REP. THOFT asked MR. FRITZ to explain how this bill would benefit in that situation. MR. FRITZ said that the BURNT FORK project is caught between the SCS and the Corps of Engineers. Because there is a campground below the dam, it is classed as high-

hazard. There are conflicting standards that may require extensive, expensive repairs to the dam. If the DNRC were in authority to do so, they could find a different location for the campground placing it totally out of danger. The department is not convinced that the dam is high hazard and this would be a much less expensive solution to the problem, according to FRITZ. He also felt that county attorneys are not experts in dams and would have difficulty in dealing with a problem of this sort. If the DNRC were the authority, there would be more consistent standards. He also commented that the federal standards are extremely stringent and he felt could be modified.

REP. CURTISS asked if MR. FRITZ could name any other instance of federal litigation besides BURNT FORK. MR. FRITZ said he could not.

REP. CURTISS asked if the state pays for the cost of the federal inspections that are presently being done. MR. FRITZ said that the federal corps of engineers contracts the DNRC to do the inspections, and has consultants for doing so.

REP. CURTISS asked who is responsible if an irrigation project is put in and then land is subdivided below the dam. MR. FRITZ said the dam owner is.

REP. HUENNEKENS noted that in the handout by MR. FOSTER that high hazard dams must be at least 25 feet high or store more than 50 acre feet of water. MR. FRITZ said that the only size criteria now is 50 acre feet or larger.

REP. HUENNEKENS felt that a 50 acre feet pond is not dangerous unless it would be in a deep drop. MR. FRITZ agreed and said that is why there are so few that are classified as high hazard.

CHAIRMAN ROTH said that, on the Statement of Intent on line 10 "existing laws" are referred to and she wondered if federal or state laws were meant. MR. FRITZ said that was a "good question".

REP. CURTISS asked what was the cost per hour for having consulting engineers conduct periodic inspections. MR. FRITZ said they were paid \$35 to \$50 per hour.

REP. CURTISS asked what salary would be paid to the full time engineers, to be hired by the department with the same qualifications. MR. FRITZ said they would receive \$18,000 to \$20,000 per year.

REP. NEUMAN asked if state regulations would be more or less stringent than federal regulations. MR. FRITZ felt the feds would not interfere with a state program with reasonable standards.

The hearing was then closed.

EXECUTIVE SESSION

SB 470.

REP. CONROY moved that the bill be moved to the Appropriations Committee for further study.

REP. HUENNEKENS said it might help the Appropriations Committee if the Water Committee took action on the bill before sending it to them.

The motion of (REP. CONROY'S) was seconded and PASSED with REP. NEUMAN voting NO.

SB297.

REP. HUENNEKENS moved that SB 297 BE NOT CONCURRED IN. The motion was seconded and PASSED UNANIMOUSLY.

SB 243.

REP. HUENNEKENS suggested that the amendments be voted upon by the committee one at a time. He then moved Amendment #1, from the list of amendments proposed by Northern Plains Resources Council and handed out by Legislative Researcher BOB PERSON.

REP. CURTISS said she objected and proposed a substitute motion of DO NOT ACCEPT THE AMENDMENTS.

REP. HUENNEKENS said the committee has to make a decision as to where the authority will rest--with the department or with the board. He felt the board was the best option. If the authority is given to the department, he felt the governor would be in control. The department has been appointed by the governor; whereas there is a carry over in board members and they are least partisan, he said.

After further discussion by the committee, REP. CURTISS withdrew her motion.

REP. HUENNEKENS again Moved Amendment #1. IT PASSED UNANIMOUSLY.

REP. CONROY moved that all amendments giving the board the authority be PASSED by the committee. He moved that wherever "department" appears, it be stricken and that "board" be inserted. The motion PASSED UNANIMOUSLY.

REP. ASAY moved amendment #3. REP. CURTISS said she was not happy with the language. REP. CONROY felt that it was redundant. BOB PERSON said that it was a clarification. The motion PASSED UNANIMOUSLY.

REP. THOFT moved that the rest of the Amendments be studied more thoroughly by the committee and acted upon at a later meeting. The MOTION PASSED UNANIMOUSLY.

SB 347.

REP. CURTISS moved that SB 347 BE CONCURRED IN.

BOB PERSON told the committee that they had been asked by the Senator (GALT) to recommend an amendment to the committee as follows: P.3,L.5/ strike: Dec. 31, 1982 Insert: Jan. 4, 1983

REP. MCLANE moved the amendment. It ws seconded and PASSED.

REP. CURTISS moved that AS AMENDED, BE CONCURRED IN. The motion was seconded and PASSED UNANIMOUSLY.

REP. CONROY moved to send the bill to APPROPRIATIONS COMMITTEE for study.

SB 176.

REP. NEUMAN moved that SB 176 BE CONCURRED IN. He suggested that the committee amend the bill on page 13, line 8. Following: applicant, insert: "unless waived by the department upon a showing of good cause by the applicant." REP. CONROY moved the Amendment be accepted by the committee. The motion PASSED UNANIMOUSLY.

BOB PERSON read the amendment proposed by the department on page 8, line 21. Following: "operation", insert: "of the appropriation works". BOB said the new language had been suggested by Mr. CHARLIE CRANE of the MWDA. CHAIRMAN ROTH moved the amendment. IT was PASSED UNANIMOUSLY.

REP. CURTISS asked GARY FRITZ what the estimated cost was. FRITZ said he used the Yellowstone for an example at \$50,000. The main concern, he said, was for the Conservation Districts who might not be able to pay. The department would have the authority to waive payment in that case by the (above) amendment. REP. CURTISS asked what size of water reservations FRITZ was referring to. FRITZ said he had only one situation to refer to and that was the Yellowstone. REP. CURTISS asked if there might be applications for ground water from an aquifer. FRITZ said yes, and in that case an EIS might be required, depending upon the scope of the application.

REP. NEUMAN's motion was withdrawn.

REP. MC LANE moved to hold the bill for further study. The motion PASSED UNANIMOUSLY.

CHAIRMAN ROTH announced that the next meeting would be at 1 p.m. on Tuesday March 24.

The meeting adjourned at 2 p.m.



CHAIRMAN AUDREY ROTH

rj

VISITORS' REGISTER

HOUSE

COMMITTEE

BILL

Date _____

SPONSOR

[illegible]

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

SENATE BILL 470

TESTIMONY OF THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

AN ACT TO REGULATE THE CONSTRUCTION OF DAMS AND RESERVOIRS ...

The "Montana Dam Safety Act" as described in Senate Bill 470 is in response to growing concern about the safety of dams in Montana. The failure of Teton Dam made us aware of the terrible destruction a wall of water can cause. Recent dam safety reports have shown that many Montana dams have safety problems. The Water Policy Review Advisory Council, chaired by Gordon McGowan, recommended that a Montana dam safety program be adopted.

Existing dam safety statutes place jurisdiction with the county attorney where the dam in question is located. Lack of consistency between counties, lack of technical expertise, and the harassed schedule of county attorneys are potential problems with the existing system. As shown on the attached table our present law is the weakest of all the western states.

Senate Bill 470 establishes a dam safety program that would:

1. Require a permit to be issued by the Department before a high hazard dam is built to ensure that the dam is designed properly;
2. Require that an engineer supervise construction of a high hazard dam to ensure the dam is actually built as designed;
3. Require periodic inspections of high hazard dams to ensure that the structures remain safe, and that developing problems can be recognized and corrected prior to them becoming a major threat to downstream areas;

4. Allows the Department to require the draining or repairing of a reservoir under emergency conditions;

The major differences between existing statutes and the proposed bill are:

1. SB 470 would provide for a consistent set of dam design and construction criteria;
2. SB 470 would take the monkey off of the county attorney's back and put it on the Department;
3. SB 470 would provide assistance to dam owners in making dams safe so that water can continue to be put to use from these structures.

As mentioned earlier, SB 470 requires a permit only for high hazard dams. A high hazard dam is defined as a structure whose sudden failure could endanger human life and cause extensive economic loss downstream. Being classified as a high hazard structure does not necessarily reflect on the structural stability of the dam. Also, just because a dam is a high hazard structure does not mean it is automatically unsafe. A high hazard dam can be safe if it is designed and constructed properly.

TABLE I
ANALYSIS OF CURRENT STATE DAM SAFETY PROGRAMS⁽¹⁾
(* indicates "yes", blank indicates "no")

State	Dam Safety Legislation in Force	State Funds Appropriated For Dam Safety	Present Program Adequate in Regard to:			State Funding	State Agency Capable of Administering Effective Programs		
			Legislative Base	Technical Staffing	Regulations & Procedures		Without Current Federal Financial Assistance	Without Federal Technical Assistance	Without Either Federal Financial or Technical Assistance
Arizona	*	*	*	*	*	*	*	*	*
California	*	*	*	*	*	*	*	*	*
Colorado	*	*	*	*	*	*	*	*	*
Idaho	*	*	*	*	*			*	
Kansas	*	*	*		*				
Montana	*								
Nebraska	*	*	*	*	*	*	*	*	*
Nevada	*	*	*		*				
New Mexico	*	*	*	*	*			*	
North Dakota	*	*	*	*	*			*	
Oregon	*	*	*	*	*			*	
South Dakota	*			*				*	
Texas	*	*	*	*	*		*	*	*
Utah	*	*	*	*	*		*	*	*
Washington	*	*							
Wyoming	*	*	*			*	*	*	*

(1) Evaluations are based on conditions existing 30 September 1979.

(2) Source: Inspection of Non-Federal Dams; Summary for Fiscal Years 1978-1979 - A Progress Report. Department of the Army Office of the Chief of Engineers Washington, D.C. 15 April 1980.

Consulting Engineers Council of Montana



Address Reply to:

February 19, 1981

Honorable Senator Stimetx and
Members of Select Water Committee
Capitol Station
Helena, Montana 59601

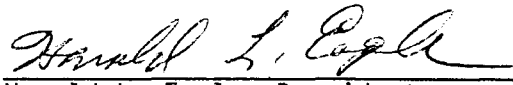
Gentlemen:

The Consulting Engineers Council of Montana wishes to present this letter and go on record in strong support of Senate Bill 470, the Dam Safety Act as proposed by the Department of Natural Resources and Conservation (DNRC).

The National Dam Safety act is the law of the land and unless Montana passes their own safety act, control and administration of dam safety will remain with the Federal Government, through the Corps of Engineers. Only by passage of Senate Bill 470 can our state retain the control and administration of the policies of dam safety and dam safety inspection. The Dam Safety Act is a public safety bill, and as engineers, we are concerned with public safety of structures. The expertise and abilities for these safety inspections are available within the boundaries of the state and within the consulting engineers council. By passage of Senate Bill 470 we can retain the commerce and control within Montana where it rightfully belongs.

Sincerely,

CONSULTING ENGINEER'S COUNCIL


Harold L. Eagle, President

HLE/smk/Nav. 9/G
cc: File

Dam safety: a look at the present and the future

By Phil Porrini

Today in the United States nearly 50,000 dams exist providing a multitude of benefits: flood control, water storage, power generation, recreation. Too often these benefits have outweighed a concern for safety.

In the past decade public attention has focused on tragedies at Buffalo Creek, West Virginia; Rapid City, South Dakota; Teton Dam, Idaho and Toccoa Falls, Georgia. The cost in human death and suffering as well as material damages have been made even more unbearable by the knowledge that these were preventable dam failures.

On August 8, 1972 Congress enacted the National Dam Inspection Act PL 92-367 directing the Corps of Engineers to inventory and inspect certain dams in the U.S.

However, it wasn't until December 1977 that money was appropriated to inspect the 9,000 nonfederal dams classified as high hazard. This classification does not necessarily mean a dam is unsafe, but that it is so located that if a failure did occur, it would cause substantial loss of life and property.

Dams inspected must be at least 25 feet high or store more than 50 acre feet of water.

In Montana about 10% of a total of over 1,300 dams have been classified as high hazard. As of January 1981, inspections were performed on 115 Montana dams under the Corps program. Of the 55 inspection reports completed, 17 revealed unsafe dams. Two required emergency action.

Phase I inspections of all high hazard and some intermediate hazard dams will be completed by late 1981. These inspections, conducted by qualified engineers from both the public and private sectors, include the analysis of all available engineering data pertaining to the design, construction and operation of the dam.

An on-site visual inspection of the dam checks for evidence of seepage, erosion, undue settlement, concrete deterioration, improperly functioning drains and maintenance procedures. Detailed reports explain the results of inspection for the dam owner, the Governor and the District Corps of Engineers officials.

Phase II investigations can be recommended when more extensive analysis, such as core sampling, is needed.

What happens after a high hazard dam is inspected and found to be unsafe?

OWNER RESPONSIBILITIES

Owners are given a list of recommendations which address corrective actions which must be taken. Recommendations may include expensive modifications, further engineering studies, development of downstream warning systems, changes in the operational plan of a reservoir or even the controlled breaching of a dam. The expense of carrying out these recommendations along with the liability should failure and downstream damage occur rests with the owner.

In cases where dams are declared unsafe because of inadequate spillway or storage capacity during the design flood, a downstream hazard and risk analysis is often recommended.

Detailed investigation of the downstream effects of a dam break helps in determining a realistic hazard classification, a perplexing question in the inspection program since its inception. Are downstream lives and property in jeopardy from a dam's failure or from the general flooding condition in the area resulting from the storm which caused the dam's failure?

Several analyses which deal with dam breaks have been developed by the National Weather Service and the Corps of Engineers. (The M-M staff is experienced in these dam break and hazard investigations).



Inspection of Lima Dam spillway gates by M-M engineer

STATE RESPONSIBILITIES

States are responsible for making sure dams in need of repair are corrected. They are also expected to finish the job of inspecting all dams not included in the Phase I program.

The Corps of Engineers program is designed to encourage states to develop or strengthen their own dam safety regulations.

Montana has a limited dam safety program which in addition to periodic inspection of state owned dams provides for inventory and inspection of nonfederal dams which "endanger the life and property of downstream citizens."

State legislation has been considered which would elevate the dam safety program requiring future design and construction of all dams in the state to be

performed under the supervision of professional engineers.

WHAT CAN BE DONE?

While most states provide for some degree of dam safety, continued emphasis must be given to the inventory, inspection and repair of all existing dams. Nearly 40,000 of the inventoried 50,000 dams in the U.S. have never been inspected by state or federal engineers.

Future design, construction and inspection of dams should be monitored by qualified engineers to provide for greater public safety. Incentives are needed such as low-interest loans or other assistance to help dam owners finance repairs on unsafe dams.

States should promote the development of safety plans, warning systems and floodplain management regulations on downstream lands affected by a dam failure.

While no single piece of legislation can guarantee there will be no future dam breaks, effective dam safety programs will promote the beneficial results of dam construction while insuring public safety.

PHIL PORRINI is a registered professional engineer with six years experience in the water resource field. For three years he served as Montana's Dam Safety Engineer performing inspections, monitoring contracts and supervising repair efforts on state-owned dams. Trained and familiar with hydrologic and hydraulic computations used in dam safety and dam break analysis, Porrini can be contacted at (406) 442-3050 to answer any questions on this subject.

Jappa

16

NAME *Evelyn Jappa* BILL No. *470*
ADDRESS *7993 Hwy 12W* DATE *3-19-81*
WHOM DO YOU REPRESENT *Self*
SUPPORT _____ OPPOSE *X* AMEND _____

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

Comments:

SB-470

In my opinion this bill will impact virtually every dam as defined by the bill. According to the definition of High Hazard there is not a single structure in the state that could not be said to "seriously" damage agriculture or some other designated category.

There are approximately 3600 dams in Montana that would probably fall under the definition of "High Hazard Dam" as defined in SB 470.

"Seriously damage" is the key.

Section 3 page 4 lines 1-5 are virtually asking for 100% safety.

In my opinion the literal interpretation of this bill will demand the breaching of every dam in the state, and the prohibition against the construction of any new dam. If for no other reason, due to the expense of supporting the Department of Natural Resources. The dam owner is forced to pay for all costs DNRC may incur and for anything they might order, including the breaching of it.

In summary this bill will virtually eliminate every earth fill, private dam in the state. This will have a profound effect on agriculture, fishing, water-fowl & recreation.

I urge the committee to give this bill a Do Not Pass.

Carlynd A. Brown

AMENDMENTS TO SB 243

1. Page 1 line 7 (Title) strike "Department" and insert "Board"
2. Page 1, line 20, strike "department" and insert "board"
3. Page 2, line 1, Following "objections" insert "report"
4. Page 2, line 4, Following "Montana" insert "from the basin"
5. Page 2, line 7, strike "tending to show" and insert "affirmatively demonstrating"
6. Page 3, line 4, Following "Wyoming" insert "from the basin"
7. Page 3, line 6, strike "tending to show" and insert "affirmatively demonstrating"
8. Page 3, line 12, strike "intends to" and insert "will"
9. Page 3, line 14, Following "85-2-307" insert "(1) and (2)"
10. Page 4, line 24, Following line 24 insert new subsection "(7)"

New subsection (7): "The department shall submit a report to the board which shall contain the department's studies, evaluations, recommendations, other pertinent documents resulting from its study and evaluation, and an environmental impact statement or analysis prepared pursuant to the Montana Environmental Policy Act, if any."

The department shall submit its report within 120 days after the date of receiving an application or concurrently with an environmental impact statement or other review required by law."

11. Following new subsection (7) insert new subsection (8)

New subsection (8): "The departments of state lands; fish, wildlife and parks; community affairs; and public service regulation shall report to the department information relating to the impact of the proposed diversion on each department's area of expertise. The report may include opinions as to the advisability of granting, denying, or modifying the diversion."

12. Page 4, line 25, strike "(7)" and insert "(9)"
13. Page 5 lines 1 through 3, Following "application," strike "it shall hold a hearing on the application within 60 days from the date set by the department for filing objections." and insert "the board shall set a date for a hearing to be held not less than 30 days but within 60 days after the board receives the department's report submitted under Section 3 (7). However, if the application is for a diversion of Montana water out of the basin for ultimate use in a facility as defined in Title 75, chapter 20, the board may set a hearing date concurrent with the timeframes established in Title 75, chapter 20."

14. Page 5 line 5, "(8)" and insert "(10)"
15. Page 5, line 9, strike "department" and insert "board"
16. Page 6, line 15, strike "department" and insert "board"
17. Page 6, line 19, Following "Montana" insert "and if the diversion and ultimate use of water will not exceed the allocated share under the compact of any of the signatory states."
18. Page 6, line 20, strike "department" and insert "board"
19. Page 6, line 24, strike "department" and insert "board"
20. Page 6 line 25, strike "upon petition by the applicant"
21. Page 7, line 9, strike "department" and insert "board"
22. Page 7, lines 13 and 14, strike "The department's" on line 14 and insert "However, the board may not" following "this act" on line 13.
23. Page 7, lines 16 and 17, strike "shall be contingent upon" and insert "prior to" following "chapter 20," on line 16