MINUTES

MONTANA HOUSE OF REPRESENTATIVES
53rd LEGISLATURE - REGULAR SESSION

COMMITTEE ON NATURAL RESOURCES

Call to Order: By **CHAIRMAN DICK KNOX**, on January 6, 1993, at 3:00 p.m.

ROLL CALL

Members Present:

Rep. Dick Knox, Chairman (R)
Rep. Rolph Tunby, Vice Chairman (R)
Rep. Jody Bird (D)
Rep. Vivian Brooke (D)
Rep. Russ Fagg (R)
Rep. Gary Feland (R)
Rep. Mike Foster (R)
Rep. Bob Gilbert (R)
Rep. Hal Harper (D)
Rep. Scott Orr (R)
Rep. Bob Raney (D)
Rep. Dore Schwinden (D)
Rep. Jay Stovall (R)
Rep. Howard Toole (D)
Rep. Doug Wagner (R)

Members Excused: Rep. Emily Swanson (D)

Members Absent: None.

Staff Present: Todd Everts, Environmental Quality Council
Michael Kakuk, Environmental Quality Council
Pat Bennett, Committee Secretary

Please Note: These are summary minutes. Testimony and discussion are paraphrased and condensed.

Committee Business Summary:

Hearing: HB 84
Executive Action: None.

Announcements: **CHAIRMAN KNOX** advised the Committee of the proxy rules which are as follows: the proxy must be handwritten, dated and signed. A Committee member may designate another member of the Committee to vote their proxy. The proxy can be specific as to the vote on a specific bill or amendment. A member may also, by proxy, allow another Committee member to use their best judgement when entering proxy votes.

HEARING ON HOUSE BILL 84

Opening Presentation: **Michael Kakuk, EQC Staff,** gave a brief presentation of the Dam Safety Study, the Water Policy Committee's (WPC) review and final recommendation. **EXHIBIT 1**

Opening Statement by Sponsor:

REP. RUSSELL FAGG, HD 89, Billings, stated that HB 84 is a WPC bill, and recommended the bill be amended in executive action to show that the bill was drafted at the request of the Water Policy Committee. The Water Policy Committee was chaired by **REP. HAL HARPER**, other members were: **REP. VIVIAN BROOKE, REP. TOM LEE, REP. RUSSELL FAGG, SEN. ESTHER BENGTSON, SEN. TOM BECK, SEN. LORENTS GROSFIELD AND SEN. LARRY STIMATZ.**

Referring to **EXHIBIT 1, REP. FAGG** pointed out that recommendation (C) on Page 3 is part of the bill. Also included in the bill, based on the study, is Issue 16 in the Final Recommendation, authorizing DNRC to impose a penalty for non-compliance. This would be a civil penalty of $1,000 per day maximum with each day a separate violation. He called the Committee's attention to Issue 17 stating this issue would be important in addressing an amendment which will be offered by **REP. MIKE FOSTER.**

Regarding Issue 17, he said the WPC recommends that DNRC not do dam inspections based on three points: (1) it would be taking work away from private engineers; (2) it is going to cost DNRC to inspect these dams; and (3) there will be a liability attached to dam inspections. Referring to point (2), **REP. FAGG** pointed out that while DNRC may presently have staff to do the inspections, sometime in the future there may not be the resources in the Department to do this work without additional money and FTEs. There are hundreds of dams across the state and there would be a lot of expense associated with doing the inspections. The main point the WPC seemed to focus on was the liability issue. Consider the case where DNRC does an inspection and signs off on it; should the dam fail in the future for some reason, resulting in injury or death, the dam owner and the DNRC could be sued. **REP. FAGG** stated he strongly believes this is a responsibility Montana should not accept at a time of tight budgets. If the dam owner can assume the cost by paying for a private engineer, it would be appropriate.

REP. FAGG noted the bill contains the definition for a "dam" as well as for a "high-hazard dam." He clarified that high hazard does not mean it is a dangerous dam, it simply means it impounds more than 50 acre feet of water. Section 3, page 5 of HB 84 states the high-hazard dam classification and looks at what will be required of a high-hazard dam.

Proponents' Testimony:

Lawrence Siroky, Dam Safety Bureau Chief, Department of Natural

Resources (DNRC) stated that DNRC was in support of HB 84 as it is proposed. **EXHIBIT 2**

REP. MIKE FOSTER, HD 32, Townsend, stated he supports HB 84 with amendments and distributed copies of the proposed amendment. **EXHIBIT 3** The amendment relates to the inspection of the high-hazard dams. He stated that while he recognizes the time WPC spent on this, based on discussions with a constituent and **Mr. Siroky,** he has put together an amendment which allows the owner to have the option of either the professional engineer or the Department performing the inspection.

Referring to the arguments given by **REP. FAGG, REP. FOSTER** addressed the issue of taking business away from the private sector. Though it sounds good, engineers are not accessible in all parts of Montana. He stated there would be consistency in the level and types of inspections with the Department doing them.

Ordinarily an inspection can cost up to $1,000 for an engineer and based on discussions with **Mr. Siroky,** the Department could do this at a lesser cost to the dam owner. **REP. FOSTER** stated that according to **Mr. Siroky** there is no effect on the DNRC's budget if they were to take on this duty, it would just be a matter of shifting responsibilities. With regard to the future, costs could change.

REP. FOSTER, addressing the liability issue, used the state fire marshal's inspections as a comparison. He stated there are fire marshals who do inspections and to his knowledge there has not been a liability problem. In both instances, it appears that liability is likely remote. Referring to the proposed amendment, the title would be amended to allow the DNRC to inspect and would require the DNRC to recover full cost of the inspections (page 7, line 20 & page 8, line 1).

Jo Brunner, Executive Director of the Montana Water Resources Association, explained the Association participated in the WPC meetings and were concerned with the definition of "high hazard." She stated that although you can say it does not mean much, the words "high hazard" mean a lot to a person. The WPC did not chose to accept this change. **Ms. Brunner** explained the Association felt this definition forced some of the dam owners into a "high-hazard" situation and will be forced to pay for an inspection. The Association supports HB 84 with **REP. FOSTER'S** amendment.

Opponents' Testimony: None.

Informational Testimony:

REP. ALVIN ELLIS, HD 84, said he owns property which holds two dams which are not high hazard dams and as a result was invited

to a Dam Safety meeting held in Billings. There are those dams which are too small to qualify and are not judged to be "high hazard", however, if they are going to use that water they are still required to go to DNRC and meet all the requirements. He stated it seemed to him that one should be afforded the same protection.

Questions From Committee Members and Responses:

REP VIVIAN BROOKE asked **REP. FOSTER** whether his amendments to HB 84 needed fiscal note. **REP. FOSTER** deferred the question to **Mr. Siroky**, but added he had no problem with a fiscal note.

REP. BROOKE asked **Mr. Siroky** to give a fiscal note projection. **Mr. Siroky** replied there are approximately 90 high-hazard dams in Montana requiring inspections. About 10 were required to have operating permits by 1990, all but one have operating permits. The rest are required to have operating permits based on inspections by 1995. If the dam owners all wait until 1995, it will be expensive to get them all done at once. **Mr. Siroky** stated that if the inspections are stretched out over a period of time, for example 12 or so per year, then the DNRC could redirect the energies of its staff and perform those inspections. **Mr. Siroky** went on to say he did not see any substantial fiscal impact due to **REP. FOSTER'S** amendment. Presently DNRC staff is consulting with those dam owners; convincing them to get the inspections; telling them who the qualified engineers are; etc. **REP. BOB GILBERT** referred **Mr. Siroky** to page 8, section 8, stating he commends the DNRC and the committee for removing the criminal offense penalty because he does not believe in making criminals out of our citizens. He asked for an example of when the DNRC would impose up to $1,000 per day penalty and how the DNRC would determine how many days to go back. For example, if an owner had not had an inspection for five years and for the last four and a half years had overfilled the dam, how would the DNRC assess a penalty on this person. **REP. GILBERT** explained that he had a problem with putting too much power in the DNRC when it is dealing with money. He stated they would be dealing primarily with ranchers who don't have much money. You could break an operator with one levy of this penalty. **Mr. Siroky** replied that the penalty is the same as the penalty which is in the water rights law. It would be $1,000 per day and then each day thereafter would be a separate violation. **Mr. Siroky** said the example **REP. GILBERT** gave would be a very extreme case and agreed it would be unreasonable to assess that kind of fine against someone who would not be able to pay or who would be put out of business. The penalty is to provide incentive to those dams the DNRC has tried on several occasions to inspect. The DNRC would first issue an order to a person not maintaining a dam in a safe way. For example, the spillway washed out the year before and the owner had ample opportunity to contact an engineer, and if after repeated requests work was not completed, the DNRC would then impose civil penalties. There would also be options on how to pay the penalty.

REP. GILBERT asked **Mr. Siroky** if there was a provision for a contested case hearing prior to the imposition of this levy. He stated his concern was that the DNRC could arbitrarily impose this penalty without giving the individual an opportunity to explain the reasons for his violation. He said going to court at a later date is not a good remedy. **Mr. Siroky** pointed out that it applies only to those dams which are 50 acre feet or larger. There are rules in the DNRC's regulations dealing with complaints.

REP. HOWARD TOOLE asked **Mr. Siroky** if there is any interest by engineers in the consulting business doing these inspections. **Mr. Siroky** stated there was an interest. He indicated it would typically be a civil engineer who has had experience in the construction of earth-filled dams.

REP. TOOLE asked **Mr. Siroky** what would prevent a dam owner from hiring an inexperienced engineer who does not necessarily have a background in dams. **Mr. Siroky** answered that statute provides the inspector must be a qualified engineer. The DNRC often gets requests for those who do dam inspections and provides a list of those who do inspections.

REP. TOOLE asked if there is a list of qualifications to protect someone from unqualified engineers. **Mr. Siroky** replied current rules do not list engineers who are qualified nor does it give a qualification list. The list the DNRC has is a list which identifies what is required in an inspection.

REP. HARPER asked for an approximate cost of the inspection by a private engineer as opposed to the fee charged by the DNRC. **Mr. Siroky** said an average cost, including travel, is calculated at approximately $350 to $400 per inspection. That amount differs from a private engineer because the DNRC does not have to figure in overhead costs or liability insurance. The approximate fee of $1,000 for a private engineer given in **REP. FOSTER'S** presentation is accurate.

REP. HARPER asked **Mr. Siroky** if, as a result of the DNRC doing inspections for one-third as much, could it be that in a very short time there would be no dam inspections being done by private inspectors. Would these inspections all be done by the state thereby placing all the liability on the state? **Mr. Siroky** stated he could not project how the market will function. If the DNRC does an inspection and there is additional work needed, the DNRC would not do the engineering to determine if it was adequate or not. The DNRC would then require the owner to obtain the services of a private engineer. The DNRC performs the inspection only to determine whether the outlet is sufficient and being maintained properly; the gate operates properly; a visual check of the dam; etc.

REP. HARPER asked for a clarification whether under present law it was mandatory for a licensed engineer to have liability

insurance. **Mr. Siroky** said he could not answer that. He did say, however, that he knew there were 40 other states having dam safety laws, and those states are slowly getting away from doing inspections.

REP. FOSTER asked **REP. ELLIS** if he had any comment about the proposed amendment. **REP. ELLIS** replied they have never used a DNRC engineer or a private engineer, they have had federal Soil Conservation Service (SCS) engineers. **REP. ELLIS** explained that if you have a large dam it wouldn't be possible to use SCS engineers because of the risks. Even though these engineers are employed by the federal government, they take conservative measures regarding their license, risk and liability.

REP. BOB RANEY asked how many FTEs the DNRC would use to do the inspections. **Mr. Siroky** stated there are presently two engineers in the dam safety program. One is a hydraulic engineer and the other is a geo-tech engineer. There is one position which is serving over nine field offices. He said the DNRC actually has five total engineers, but the others are involved in water rights and other investigations.

REP. RANEY asked if these two engineers are trained or qualified in dam inspections or if any engineer can inspect dams. **Mr. Siroky** stated that not just any engineer can inspect dams. The DNRC is in the process of training the field engineers. Two of the staff, including **Mr. Siroky**, would be qualified to inspect dams.

REP. RANEY asked how long it takes to do inspections. **Mr. Siroky** said that, in addition to travel time, it takes one-half to one day to inspect the dam and then one day to write a report. The DNRC would have to redirect current activities to complete the additional inspections. If the DNRC does not redirect what the staff is doing now, there would be additional staff requirements.

REP. RANEY asked if the Department's staff is redirected to do inspections, what is it they already do that would not get done. **Mr. Siroky** replied that it was hard to be specific. The staff is presently working with dam owners; reviewing previous reports; identifying a generic emergency action plan; completing hazard classifications; conducting workshops around the state for dam owners; and working with engineers who are doing design or construction work on dams.

REP. TOOLE expressed concern for contracting with competent engineers. There are agencies in the state who are in the business of inspecting for safety, i.e. fire marshals and electrical inspectors, similarly the DNRC staff involved with the dam safety program. **REP. TOOLE** asked **Mr. Siroky** if, based on present involvement, the DNRC dam safety engineers weren't the best qualified to do the inspections as opposed to engineers who might only do 180 days of this type of work per year. **Mr. Siroky** said no, he did not believe they were the best qualified. There

are a number of firms in state with personnel who are qualified to do these inspections.

REP. FOSTER asked **Mr. Siroky** if his staff already goes to these dams to make on-sight visits if an inspection would only be an extension of what they already do. **Mr. Siroky** said yes, noting that in the past two summers they have identified with each owner what needs to be done to get an operating permit; provided a list of engineers who do inspections; and identified emergency situations.

REP. FAGG asked **Mr. Siroky** if, once the owner has received a permit, it is necessary for the DNRC to go out again unless it is to inspect the dam. **Mr. Siroky** stated the owners' dams need to be permitted by 1995. The DNRC would not need to go out unless a complaint was received.

Closing by Sponsor:

REP. FAGG stated the Director of DNRC has assured him they have cut as much as they can. However, based on what **Mr. Siroky** has stated, there may be an additional .5 FTE that is not needed. Based on an approximate 80 inspections per year for the next three years, 27 per year times four days equals 108 days per year someone will be doing inspections. Most personnel work 220 days per year. **REP. FAGG** said if this staff has the time to redirect to do dam inspections at about .5 FTE, then perhaps the Department needs to have .5 FTE cut from it and the work given to the private sector. Referring to **Mr. Siroky's** comment that the Department does not have to pay overhead or liability insurance, **REP. FAGG** said why should the state have to pay overhead and to take up the liability insurance for a particular dam owner when the owner is the one receiving the benefit from that inspection. He stated he could not fathom giving the state more responsibilities at a time of cut backs. Regarding qualified engineers, **REP. FAGG** stated he felt the market would determine that. He said he appreciated **Ms. Brunner's** comment about the definition of "high hazard" and if the committee felt there was a better term, he would support that. However, he stated he did not support **REP. FOSTER'S** amendment.

ADJOURNMENT

Adjournment: 4:45 p.m.

DICK KNOX, Chairman

PAT BENNETT, Secretary

ROBERTA OPEL, Secretary

DK/pb

HOUSE OF REPRESENTATIVES

Natural Resources COMMITTEE

ROLL CALL DATE 1/6/92

NAME	PRESENT	ABSENT	EXCUSED
Jody Bird	✓		
Vivian Brooke	✓		
Russ Fagg	✓		
Gary Feland	✓		
Mike Foster	✓		
Bob Gilbert	✓		
Hal Harper	✓		
Scott Orr	✓		
Bob Raney	✓		
Dore Schwinden	✓		
Jay Stovall	✓		
Emily Swanson			✓
Howard Toole	✓		
Doug Wagner	✓		
Rolph Tunby, Vice Chairman	✓		
Dick Knox, Chairman	✓		

EXHIBIT 1
DATE 1/6/93
SB 84

Section 1. – Dam Safety Study

Introduction

Senate Bill 313, derived from the Water Storage subsection of the 1991 State Water Plan, directed the Water Policy Committee, with the cooperation of the Department of Natural Resources and Conservation (DNRC), to conduct a study of the Montana Dam Safety Act and implementing regulations to determine:

(a) the acceptable degree of risk to public safety and appropriate allocation of responsibility for that risk between the public, government, and dam owners;
(b) whether the definition of a high-hazard dam should be modified;
(c) whether the high-hazard classification should be expanded into a risk scale that allows structural design requirements to reflect probable risk to life and property; and
(d) whether the DNRC should be given greater discretion to substitute alternative means of addressing risks, such as early warning systems, for structural design requirements.

The Committee understood the importance of this study dealing with the potential loss of human life and devoted a substantial amount of time and energy to bring it to a successful conclusion. The Committee heard exhaustive reports from Committee and DNRC staff regarding the specific issues involved before formulating the following recommendations. Additionally, the Committee believed that the public should play an important role in this study. The Committee developed a mailing list including almost 150 dam owners, Disaster and Emergency Services personnel, and engineers involved in the design, construction and maintenance of dams in Montana. Throughout this study, individuals on this list were notified of every meeting, ensuing Committee discussion, draft and final recommendations and a specially advertised public hearing.

What follows is a brief review of the Committee study and final recommendations. For more details on the issues or the study itself, please contact Committee staff.

SB 313 ISSUE (A). THE COMMITTEE SHALL DETERMINE THE ACCEPTABLE DEGREE OF RISK TO PUBLIC SAFETY AND APPROPRIATE ALLOCATION OF RESPONSIBILITY FOR THAT RISK BETWEEN THE PUBLIC, GOVERNMENT, AND DAM OWNERS.

Issue Background

The Montana Dam Safety Act requires that, by July 1, 1995, existing high-hazard dams must obtain a permit from the DNRC verifying that the dams satisfy safety standards.

To date, studies have been completed on approximately 33 of 85 high-hazard reservoirs to determine the modifications needed to satisfy the standards. The cost of rehabilitating state-owned high-hazard dams is expected to exceed $200 million.

The public policy questions the Committee is being asked to answer for the state are "What degree of risk is acceptable", and "Who should assume it?" There is a tradeoff to be made between the cost of building or rehabilitating a dam on the one hand, and the risk to public safety on the other. If the risk to public safety is increased -- for example by allowing a lower minimum spillway capacity -- the cost of reservoir construction and rehabilitation is decreased. Conversely, increased safety (less risk to the public), increases costs. The Committee is being asked, during the next interim, to decide where the balance is between cost and safety.

Sub-Issues Identified for In-depth Analysis

Issue 1. Liability - Current Montana statutes and court case law impose the negligence liability standard for permitted dam owners. Is this appropriate?

Committee Action Summary

The Committee addressed risk allocation, to some degree, with every dam safety issue. For example, when considering the existing loss of one life standard under Issue 5, the Committee decided that it wished not to change the current standard to something greater than the loss of one life. That kept most of the risk burden on the dam owner. Had the Committee decided that the proper loss of life standard should be greater than one life, it would have shifted some of the risk burden to the general public.

But apart from this indirect method of addressing risk allocation, this issue was addressed directly by looking at dam owner liability. For example, requiring a downstream individual, injured through a dam failure, to prove that a dam owner was negligent before collecting damages shifts some of the risk burden to the general public and away from the dam owner. Conversely, holding a dam owner strictly liable for any damage resulting from dam failure, regardless of negligence, places the maximum risk burden on the dam owner. Current Montana statutes and court case law impose the negligence liability standard for permitted dam owners. The Committee was being asked under SB 313 if that standard was appropriate.

The Committee heard presentations regarding liability standards in Montana and other states. It also received much testimony, written and oral, from the public on this issue. One subject that was fully discussed involved the issue of *encroachment*.

The Committee found that the current negligence standard was appropriate for properly constructed dams, but it also believed that an even higher test should have to be met before an injured party can sue a dam owner if the injured party placed a structure downstream of, in other words - encroached upon, an existing dam.

The risks inherent in placing a structure downstream of an existing dam should be born by both the dam owner and the downstream landowner.

Another sub-issue discussed by the committee regarded the current fragmented approach to dam safety complaints. Current law allows an individual to approach the district court or the county commissioners with a complaint involving the construction of a dam. The court or the county commissioners must then appoint a three person dam safety panel to determine if the complaint is valid. The Committee believes that the process should be consolidated within the DNRC to ensure accurate and efficient dam safety complaint response and to reduce the potential for dam owner harassment. An individual who disagrees with the DNRC determination, or an individual actually injured through dam failure, would retain the right to file an action in district court.

Final Recommendation

The Committee will sponsor legislation that:

(a) requires a landowner who places a structure downstream of an existing dam to prove that the dam owner was grossly negligent before the dam owner can be found liable for damages;

(b) extends the gross negligence standard established in (a) to those non-high-hazard dams designed, constructed, and maintained under the supervision of a qualified engineer; and

(c) removes the county commissioners and district court from the initial dam construction safety complaint process.

Draft legislation implementing this recommendation is attached as Appendix 1.

Issue 2. High-Hazard Dam Insurance - Apparently, few high-hazard dam owners in Montana have insurance for their dams. Is this a problem, and if so, what is the appropriate state response?

Committee Action Summary

The issue of high-hazard dam insurance arose mid-way through the study after the public hearing in May, 1992. The dam owners who testified stated that dam insurance was difficult to find and almost always too expensive to purchase.

The Committee sent a questionnaire to all the high-hazard dam owners in Montana and discovered that most did not have insurance but that most would probably purchase insurance if they could find it at a reasonable cost. The potential costs and benefits of a mandatory insurance requirement or a state subsidized dam insurance program where briefly discussed. The Committee expressed little support for either option due to the fiscal burdens the programs would impose on the state or the dam owners.

Final Recommendation

The Committee, while it believes adequate dam insurance to be in the best interests of the dam owner and the citizens of Montana, will not recommend mandatory dam insurance or a state subsidized insurance program. However, the Committee will continue to work with the private insurance industry to determine the feasibility of providing reasonable high-hazard dam insurance.

SB 313 ISSUE (B). THE COMMITTEE SHALL DETERMINE WHETHER THE DEFINITION OF A HIGH-HAZARD DAM SHOULD BE MODIFIED.

Issue Background

The Montana Dam Safety Act presently defines a high-hazard dam as any reservoir retaining 50 acre-feet (ac/ft) or more of water that, if it fails, would likely cause a loss of life. Classification as high-hazard does not imply nor determine whether or not the dam is structurally sound. The Committee is being asked to decide if the existing definition is adequate, or if it should be modified.

Sub-Issues Identified for In-depth Analysis

The Committee identified two categories of sub-issues under this topic -- those dealing only with the term *high-hazard* itself, Issue 3, and those dealing with the technical classification of a dam as high-hazard, Issues 4 through 10.

Issue 3. High-Hazard Nomenclature - The term "high-hazard" is sometimes misunderstood to mean unsafe. Should permitted dams be called something other than "high-hazard"?

Committee Action Summary

The Committee again heard much public testimony regarding this issue. As evidenced by the public comment summary, Appendix 2, there is widespread misunderstanding of the term "high-hazard" among the general public. For this reason, most dam owners want the term changed. The Committee, however, was concerned by the lack of consistency among states and federal agencies that regulate dams. Of the 14 western states, eight use the term high-hazard, two use Class 1, 2, or 3, and four regulate all dams and therefore do not differentiate between high-hazard and other types of dams. Federal agencies use Class A, B, or C, or the term high-hazard. The Committee also expressed concern that by changing the name high-hazard to something less alarming it may remove an effective mechanism for putting downstream landowners on notice that there was a potentially life-threatening dam upstream.

Final Recommendation

The Committee will not recommend a change in nomenclature at this time. However, the Committee remains concerned by persistent public misunderstanding of the term "high-hazard" as equaling "structurally unsound". The Committee recommends that the DNRC continue working with other states and federal agencies to develop a uniform high-hazard dam nomenclature and that the DNRC should continue to review this issue as it amends its dam safety rules in the future.

Issue 4. Dam Regulatory Capacity - Montana currently regulates dams that contain 50 ac/ft of water or more. Should this standard be changed?

Committee Action Summary

By modifying the 50 ac/ft definitional standard and or adopting a minimum dam height requirement, Montana could change the number of dams that it regulates. Raising the ac/ft limit to, for example, 100 ac/ft would eliminate the need for state operating permits for dams under that limit. While this may stimulate the construction of dams in Montana, this modification could have an impact on the safe operation of these dams and place additional people at risk from a dam failure.

EXHIBIT 1
DATE 1/6/93
HB 84

Final Recommendation

The Committee believes that the 50 ac/ft standard is appropriate and that the addition of a minimum height requirement would not add to the effectiveness of the state dam safety program, therefore, the Committee recommended no change in the current standard.

Issue 5. Loss of One Life Standard - Montana currently regulates dams that could cause the loss of one life if they failed. Should this standard be changed?

Committee Action Summary

The DNRC told the Committee that changing the current "high-hazard" loss of one life standard to mean the loss of a few lives would not reduce the number of dams that the state regulates. Currently, a "high-hazard" dam failure in Montana would involve the likely loss of a few lives. While changing the loss of life standard could stimulate the construction of dams in Montana, it also could affect the safe operation of those dams and place additional people at risk from a dam failure.

Final Recommendation

The Committee believes that "loss of one life" is the proper standard for the state dam safety program and therefore recommends no change in the current standard. The Committee understands that this is more restrictive than some federal regulations.

Issue 6. Dam Owner Not Included in Loss of Life Calculation - Montana does not exempt the dam owner or the owner's family from the loss of life standard. Is this appropriate?

Committee Action Summary

Again, the DNRC told the Committee that by exempting the dam owner and or the owner's family from the loss of life standard, the state would not significantly reduce the number of dams it regulates. The DNRC has classified only one dam "high-hazard" due to the presence of the owner and or the owner's family alone. While exempting the dam owner and or the owner's family again could stimulate the construction of dams in Montana, it could affect the safe operation of those dams and place additional people at risk from a dam failure. The Committee believes that "loss of one life", including the dam owner and the owner's family, is the proper standard for the state dam safety program. The Committee understands that this is more restrictive than some federal regulations.

Final Recommendation

The Committee considered public comments that supported removing the dam owner and the dam owner's family from the loss of life calculation but determined the current standard is appropriate.

Issue 7. Initial Reservoir Condition - When determining the flooded area in a dam failure calculation the DNRC assumes the water level is at the crest of the emergency spillway. Is this assumption appropriate?

Committee Action Summary

Determining whether a dam failure would cause the loss of a life requires the DNRC to determine the flooded area due to that dam failure. To determine the flooded area, the DNRC must assume an initial reservoir water level. DNRC rules state that the water level assumed for the dam failure calculation will be at the crest of the emergency spillway. This assumption is the least likely to indicate a potential loss of life. Raising the initial water level assumption to something higher than the crest of the emergency spillway would probably indicate a greater likelihood of loss of life and could classify more dams as "high-hazard" in Montana.

Final Recommendation

The Committee believes that the current state administrative rules utilizing the crest of the emergency spillway initial water level is appropriate for the state dam safety program. This standard, when considered with the other DNRC standards, represents an appropriate balance between cost of dam construction and public safety.

Issue 8. Clear Weather Failure Mode - Again, when determining the flooded area in a dam failure calculation, the DNRC also assumes that there are no flood flows occurring upstream of the dam. Is this assumption appropriate?

Committee Action Summary

Montana currently uses the "clear weather failure mode" in determining the flooded area in a dam failure calculation. In other words, the DNRC assumes that there are no flood flows occurring upstream of the dam when determining the extent of downstream inundation resulting from a dam failure. This assumption apparently will predict a greater probability of loss of life than other available assumptions.

By using a different assumption, one less likely to indicate a probable loss of life, the state could regulate fewer dams. Changing the failure mode assumption in this fashion could stimulate the construction of dams in Montana. However, it could also affect the safe operation of those dams and place additional people at risk from a dam failure.

Final Recommendation

The Committee believes that the current state administrative rules utilizing the "clear weather failure mode" is appropriate for the state dam safety program. Again, this standard, when considered with the other DNRC standards, represents an appropriate balance between cost of dam construction and public safety.

Issue 9. Definition of "Structures" - The DNRC assumes that a loss of life would occur if any of the following "structures" are present or planned in a breach flooded area: occupied houses and farm buildings, stores, gas stations, parks, golf courses, stadiums, ball parks, interstate, principal and other paved highways, railroads, highway rest areas, RV areas, and developed campgrounds. Should the definition of "structures" be changed?

Committee Action Summary

By removing some of the above listed "structures" from the rules, the state could regulate fewer dams. While this could stimulate the construction of dams in Montana it could affect the safe operation of those dams and place additional people at risk from a dam failure.

Final Recommendation

The Committee recognizes that some concern exists over what structures should be included in the loss of life standard calculation, but in the absence of a persuasive argument to remove any specific "structure" from the list, the Committee, after much debate, did not recommend any changes in the definition of "structure".

Issue 10. Flooded Depth Calculations - Current DNRC policy does not attempt to estimate a specific flood depth for a specific site during its breach flooded area calculations. Is this appropriate?

Committee Action Summary

The DNRC justified its current policy by stating that its best estimate for a specific flood depth is variable by a few feet. Factors such as erosion, flood debris, and vegetation cannot be precisely quantified for a greater degree of accuracy. If the DNRC were to change its policy and assume, for instance, that a flood depth of less than two feet would not cause a loss of life, the breach flooded area would be reduced. This could reduce the number of dams that the state regulates. While this could stimulate the construction of dams in Montana it could affect the safe operation of those dams and place additional people at risk from a dam failure.

The Committee believes that a flood depth of a minimum level should not impede the construction of storage facilities in the state. However, the Committee understands that it is difficult for the DNRC to determine with a great degree of accuracy what the exact flood depth at a specific site in a dam failure situation would be. The Committee decided to err on the side of increased public safety and recommend no change to the current standard.

Final Recommendation

The Committee believed that due to the difficulty in accurately estimating flood depth, and recognizing that DNRC currently has discretion in using the breach flooded area calculation to classify high-hazard dams, the current standard is appropriate.

SB 313 ISSUE (C). THE COMMITTEE SHALL DETERMINE WHETHER THE HIGH-HAZARD CLASSIFICATION SHOULD BE EXPANDED INTO A RISK SCALE THAT ALLOWS STRUCTURAL DESIGN REQUIREMENTS TO REFLECT PROBABLE RISK TO LIFE AND PROPERTY.

Issue Background

Do all high-hazard dams present the same risk to public safety and loss of property? Should a large dam immediately above a city be treated differently than a small dam some miles above a campground? The present system of classifying high-hazard dams does not evaluate the relative level of risk associated with a given reservoir. The Committee is being asked to decide whether the classification system should be expanded to include a "risk scale," and if so, what factors should be considered is assigning relative levels of risk.

EXHIBIT

Sub-Issues Identified for In-depth Analysis

Issue 11. Statutory Risk Assessment - Currently the DNRC is not allowed to consider the probable risk to life and property in setting design standards for high-hazard dams. In other words, a high-hazard dam overlooking a highway is regulated the same as a high-hazard dam overlooking a subdivision. Is this appropriate?

Committee Action Summary

The Committee wanted to ensure that the DNRC dam safety standards are clear and easy to understand and apply for engineers and dam owners. The Committee believes that that is the current situation. The Committee discussed the potential for legislatively mandating dam safety standards or a risk scale but determined that the current amount of DNRC discretion on this issue was appropriate.

Final Recommendation

The Committee determined that, considering the discretion currently granted to the DNRC, the standard is appropriate.

Issue 12. Risk Scales in DNRC Regulations (a) Spillway Standards - Are the current spillway standards, set in DNRC rules, a reasonable balance between cost of construction and risk of dam failure?

Committee Action Summary

Since the actual dam standards are not set in the Dam Safety Act, they were set by the DNRC through administrative rule. The establishment of the standards is in itself a balancing of cost and risk. Minimum standards that are too low present increased risk to the public, while minimum standards that are too high can greatly increase costs to the dam owner. The Committee was being asked if the risk scale established as a result of the DNRC dam safety rules is a reasonable balance between cost and risk.

Final Recommendation

The Committee generally believes that current DNRC rules are an appropriate balance between cost and risk. The Committee was interested in allowing the DNRC director more flexibility to waive certain standards under the appropriate circumstances, but decided that, considering the current level of DNRC discretion, they would recommend no changes in the current standards.

Issue 13. Risk Scales in DNRC Regulations (b) Spillway Requirements and Warning Time - Montana allows smaller spillways for dams where the nearest community contains less than 20 residents and is more than 4 hours away? Is this appropriate?

Committee Action Summary

Montana regulations allow for smaller spillways if there are less than 20 residents downstream and the first residence is more than 4 hours of breach travel time away. Again, the Committee was being asked if the balance between cost and risk is appropriate.

The Committee again felt that the DNRC had achieved an appropriate balance. The issue of spillways in general received much Committee attention. Current DNRC policy will allow a minimally substandard spillway to remain until the dam owner begins other needed dam repairs. The Committee was concerned that this policy may unintentionally discourage dam owners from doing needed repairs on their dams for fear of triggering stricter spillway standards. Also, the Committee was interested in allowing the DNRC to accept existing minimally substandard spillways on otherwise sound dams. The DNRC told the Committee that they currently exercised a certain amount of discretion in identifying substandard spillways and that they had the authority to require a dam owner to begin needed repairs if the dam was a threat to public safety.

Final Recommendation

The Committee determined the current standard is appropriate.

Issue 14. Risk Scales in DNRC Regulations (c) Instrumentation - Currently, instrumentation requirements vary for different dams depending on the size and condition of the dam. Is this appropriate?

Committee Action Summary

The Committee generally believes that the method of determining instrumentation requirements is appropriate. The Committee did discuss leaving instrumentation requirements to the discretion of the engineer, especially for dams less than 100 feet in height, but decided not to pursue this option.

Final Recommendation

The Committee determined the current standard is appropriate.

Issue 15. Risk Scales in DNRC Regulations (d) Construction Standards - Montana uses current federal construction standards, except for spillway standards, for new dam construction. Is this appropriate?

Committee Action Summary

Again, the Committee discussed increasing the engineer's discretion in setting construction standards but they generally believed that the current standards are appropriate.

Final Recommendation

The Committee determined the current standards are appropriate.

Issue 16. Risk Scales in DNRC Regulations (e) Dam Inspections, Frequency - Montana requires a high-hazard dam to be inspected at least every five years. The DNRC may require more frequent dam inspections for certain dams depending on dam condition or location. Is this appropriate?

Committee Action Summary

The Committee strongly felt that the once every five year minimum inspection period was appropriate.

Final Recommendation

The Committee found that the current inspection standards are appropriate. However, the Committee was concerned by the apparent inability of the DNRC to enforce the inspection requirements, therefore, the Committee will recommend amending existing law authorizing the DNRC to impose a penalty for Dam Safety Act non-compliance.

Draft legislation implementing this recommendation is attached as Appendix 1.

Issue 17. Risk Scales in DNRC Regulations (f) State Provided Dam Inspections - Complaints have been received regarding the cost of required dam inspections. The DNRC is not currently authorized to provide inspections for non-state owned dams. In order to provide lower cost inspections to dam owners, should Montana allow DNRC personnel to inspect high-hazard dams?

Committee Action Summary

The Committee, in response to public testimony, was concerned that many dam owners in Montana could not get a private engineer at a reasonable cost to perform the inspections. However, the Committee determined that the options available for addressing the problem created other substantial problems for the state involving cost, liability, and interference with the private engineer market.

Final Recommendation

Due to concerns regarding state inspection program funding and state liability issues, the Committee will not recommend any changes to the current DNRC inspection policy.

Issue 18. Risk Scales in DNRC Regulations (g) Dam Inspections, Extent - The extent of dam inspections currently varies depending on dam condition or location. Is this appropriate?

Committee Action Summary

The condition of a dam or the downstream hazard determine the extent of the DNRC required periodic inspection. In other words, dams that are in good condition do not require as extensive an inspection as dams in poor condition. The extent of the periodic inspection is reviewed by the DNRC. Is this variation in the extent of the dam inspection appropriate?

The Committee felt strongly that the current DNRC dam inspection policy is appropriate.

Final Recommendation

The Committee determined the current standard is appropriate.

SB 313 ISSUE (D). THE COMMITTEE SHALL DETERMINE WHETHER THE DNRC SHOULD BE GIVEN GREATER DISCRETION TO SUBSTITUTE ALTERNATIVE MEANS OF ADDRESSING RISKS, SUCH AS EARLY WARNING SYSTEMS, FOR STRUCTURAL DESIGN REQUIREMENTS.

Issue Background

This is fairly self-explanatory: The Committee is being asked to decide whether there are other acceptable means of addressing risk, presumably that are less expensive, than stringent structural design requirements.

Sub-Issues Identified for In-depth Analysis

Issue 19. Other Risk Assessment Considerations, DNRC Scoring Process - Should the DNRC develop a dam "scoring" process to determine what hazard class, or what design standards, should apply to a particular dam?

Committee Action Summary

The Committee was interested in developing a scoring process including dam soundness and potential threat to life or property but members were concerned that the process could become too subjective. The Committee encouraged the DNRC to continue to evaluate the potential for developing a dam safety scoring process.

Final Recommendations

The Committee decided that it would make no recommendations regarding Issue 19.

Issue 20. Other Risk Assessment Considerations, Probabilistic Approach - Should the DNRC establish a probability number for dam failure?

Committee Action Summary

The Committee believed that establishing a probabilistic approach to dam failure calculations may be more meaningful than using the current potential maximum flood approach. The Committee encouraged the DNRC to continue working with other states and federal agencies in evaluating this approach.

Final Recommendations

The Committee decided that it would make no recommendations regarding Issue 20.

DATE 1/6/93
HB 84

TESTIMONY OF THE
DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION
ON HOUSE BILL 84, FIRST READING

BEFORE THE HOUSE NATURAL RESOURCES COMMITTEE

JANUARY 6, 1992

A BILL FOR AN ACT ENTITLED: "AN ACT REVISING THE DAM SAFETY ACT; REVISING THE AUTHORITY OF THE DISTRICT COURT AND COUNTY COMMISSIONERS TO CONSIDER DAM SAFETY COMPLAINTS."

The Department of Natural Resources and Conservation (DNRC) supports the proposed bill. It is the result of a thorough review of Montana's laws and regulations concerning safety of dams by the Legislative Water Policy Committee. The Water Policy Committee deliberations included the participation of DNRC staff.

The bill streamlines the process of addressing concerns regarding the construction or operation of dams and reservoirs that endanger life or property. Presently, the statute provides that complaints by an individual may be pursued through the either the Department, County Commissioners, or District Court. Dams 50 acre-feet in size or larger are under the jurisdiction of the Department. Those under construction are the responsibility of a County Commission. District Court jurisdiction applies to any dam, whether existing or under construction. If House Bill 84 becomes law, all complaints would be filed with the DNRC.

During the recent drought years, the Department has investigated one to two complaints per year. At the same time, we are not aware of any complaints filed with the a County Commission or a District Court. As such, the Department expects it could address all future complaints without experiencing increased costs or having to increase staffing levels.

The civil penalty provided in Section 8 serves as both an enforcement tool and an incentive to dam owners to properly operate and maintain their facilities. It would apply to high-hazard dams -- those 50 acre-feet in size or larger and having the potential to cause loss of life if failure should occur -- as well as those impounding 50 acre-feet or more where a complaint is involved. The existing penalty of restricting operation of a reservoir is not always possible since runoff and subsequent reservoir storage cannot be physically controlled; therefore, the additional enforcement capability of a civil penalty is needed.

In summary, the Department supports the changes to the statutes as provided by this legislation. The changes proposed are a result of the Legislative Water Policy Committee's thorough study of the Montana Dam Safety Act and administrative rules and represent practical adjustments to the Dam Safety Act that has been in effect since 1985.

DATE 1/6/93
HB 84

Amendments to House Bill No. 84
First Reading Copy

Requested by Rep. Foster
For the Committee on House Natural Resources

Prepared by Michael S. Kakuk
January 6, 1993

1. Title, line 6.
Following: "COMPLAINTS;"
Insert: "ALLOWING THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION ENGINEERS TO INSPECT HIGH-HAZARD DAMS; REQUIRING THE DEPARTMENT TO RECOVER THE FULL COSTS OF DEPARTMENT INSPECTIONS;"

2. Page 7, line 20.
Following: "qualified"
Insert: "private or department"

3. Page 8, line 1.
Following: "necessary."
Insert: "The department shall recover from the dam owner the full costs for an inspection completed by the department under this section, as provided by rules adopted pursuant to 85-15-110(6)."

HOUSE OF REPRESENTATIVES
VISITOR'S REGISTER

Natural Resources COMMITTEE BILL NO. HB 84

DATE _____ SPONSOR(S) _____

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NAME AND ADDRESS	REPRESENTING	SUPPORT	OPPOSE
LAUREEN SIROKY	Dept of Nat'l Res + Cons	HB 84 ✓	

PLEASE LEAVE PREPARED TESTIMONY WITH SECRETARY. WITNESS STATEMENT FORMS ARE AVAILABLE IF YOU CARE TO SUBMIT WRITTEN TESTIMONY.