

S B

183

HOUSE COMMITTEE REPORT

5/12

(9)

Date referred: 5/6/87

FURTHER REFERRALS: Finance

DATE: 5/12/87

The Resources Committee has considered CSSB 183 (Res)

"An Act relating to dams and reservoirs; and providing for an effective date."

RECOMMENDS:

- replace with _____ the same title
- attached amendment(s) a new title
- do pass
- do not pass
- no recommendation
- individual recommendations
- additional referral to the _____ Committee

ADOPTS: _____ letter of intent

ATTACHES NEW FISCAL NOTE(S):

- fiscal impact same as previous fiscal note published 4/3/87
- zero fiscal note same as previous zero fiscal note published 3/1/87
- zero with analysis

SIGNING DO PASS:

SIGNING OTHER RECOMMENDATIONS:

Jan Ost

Cliff Davidson

Donk Schultz

Harold Springer

Adelheid Herrmann

Mike Hagan

Wendy Leaver

Lynne Hagan

Bob Lee

Jan Ost

Chairman's signature

ALASKA STATE LEGISLATURE

SB 183

Sen. Lloyd Jones, Chairman
Sen. John B. "Jack" Coghill, Vice Chairman
Sen. Mitch Abood
Sen. Bettve Fahrenkamp
Sen. Tim Kelly



P.O. Box V
Juneau, AK 99811

907-465-4921

Senate Transportation Committee

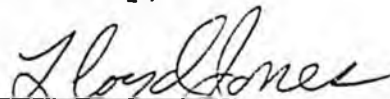
COMMITTEE REPORT

Madame President:

The transportation committee expresses that it is not the intent, either through Senate Bill 183, nor through regulations, that the bill affect settling ponds of small placer miners.

The transportation committee also asks to see and review the regulations that are promulgated to implement the legislation.

Sincerely,

 4/2/87

Senator Lloyd Jones, Chairman
Senate Transportation Committee

WESTERN STATES WATER

220 South 2nd East, Suite 200 Salt Lake City, Utah, 84111 (801) 521-2300



5B
103

A weekly report prepared by the staff of the Western States Water Council

Tom Willardson - Editor

WATER RESOURCES

Issue #671, March 27, 1987

Dam Safety

On March 19, the Wall Street Journal carried a front page article on dam safety. It addressed progress and problems in current federal and state programs. Of some 80,000 U.S. dams, about 10% are owned or regulated by federal agencies. The rest are controlled by state and local governments and private interests. On the state level, a Federal Emergency Management Agency (FEMA) report lists 1948 unsafe dams, down from 2,900 in 1981. California's regulatory program involves a staff of 60 and a \$3.3M budget. Pennsylvania also has an exemplary program. Over five years, the number of unsafe dams in the state has been reduced from 208 to 72, in part with the help of \$50M in low interest state loans, usually under consent agreements. However, nationally, state program expenditures average \$265,000 a year. The FEMA survey found only 21 states with adequate regulatory dam safety programs. Many are underfunded or undermanned. Alabama, Delaware and Hawaii have no dam safety programs. During this era of tight budgets, expenditures for dam safety programs or repairs are not always a high priority. The Corps FY88 budget request includes no funding for the newly authorized non-federal dam safety program grants under P.L. 99-662. Further, from 1981 to 1984, the Corps of Engineers undertook only two safety related dam modifications. Reportedly 20% of the Bureau of Reclamation's 300 dams are classified as unsafe. While the Bureau has increased its request for dam safety funds, since 1980 only about 11% of \$750M authorized for safety modifications has been spent.

High hazard dams, or those where failure would mean the loss of life, are of greatest concern. Political pressure for federal action probably peaked after the 1976 Teton Dam disaster in Idaho, which killed eleven people. The article notes that in the 1970's, "nearly 500 people died in six major U.S. dam breaks." There have been few fatalities in the 1980's. However, according to William Bivins, FEMA Dam Safety Coordinator, "One of these times, Mother Luck isn't going to hold. One of these high hazard dams is going to pop at night when everyone is asleep in bed. It will wipe out hundreds of people." Joseph Ellam, Pennsylvania's Director of Dam Safety and past president of the Association of State Dam Safety Officials (ASDSO), notes, "Catastrophic failures have occurred before and they will occur again. With the exception of nuclear powerplants, no man-made structure has a greater potential for killing a large number of people than a dam." In Pennsylvania, the Greater Johnstown Water Authority is under order to fix or dismantle its Salt Lick Dam. The dam is located near the site where a dam failed during the great Johnstown flood of 1889, which killed 2,200 people.

How safe is safe? This question is not easily answered. Federal guidelines require federal dams to withstand the "maximum credible earthquake," and have a spillway capacity to pass the "probable maximum flood." Defining and implementing these requirements leaves substantial room for professional disagreement. William Gianelli, former Assistant Secretary of the Army for Civil Works and former Director of the California Department of Water Resources, states the Corps could never explain to his satisfaction how it calculated the probable maximum flood. According to the Corps, if Prado Dam on the Santa Anna River above Los Angeles failed during the probable maximum flood, it would inundate 1.3 million homes with \$40B in damages. However, Gianelli notes, "That dam has been there fifty years. It has never filled to the point where the spillway is even used. You fix a dam if it's leaking." In 1983, the West Pinopolos Dam in South Carolina suddenly sprang an enormous leak. While police evacuated downstream residents, emergency personnel worked feverishly to stop

the leak, finally using a makeshift dam of pile-driven utility poles. Owned by the South Carolina Public Service Authority, a state-owned utility, the dam is 30 miles above Charleston on the Cooper River. According to Ronald Corso, Director of the Inspections Division for the Federal Energy Regulatory Commission, if the dam failed, some 2,000 residents "wouldn't have time to run for their lives." While the dam is now in good repair, Corso says an extraordinary earthquake, such as hit Charleston in 1886, could liquify the dam's foundation. The resulting flood would cause an estimated \$1B in damages to a major industrial corridor, the Charleston Naval Yard and the Atlantic Fleet's Nuclear-weapons Arsenal, finally clogging Charleston Harbor with silt and closing this key Navy port. Under federal pressure, the utility has agreed to strengthen the dam. According to Corso, "We don't care where they get the money, so long as they fix it."

This raises another problem. How do you finance needed dam safety repair work? In 1984, a survey by the Western States Water Council identified 665 dams in fifteen western states with safety problems. The rough cost estimate for rehabilitation totaled over \$316M. Private financial sources are often limited or unavailable. Dam safety work seldom produces new revenues to pay back bonds. State and local budgets are also tight. The Reagan Administration has opposed federal funding for non-federal dam safety work. As a result last year Congress dropped from the Corps omnibus legislation provisions authorizing federal financial and technical assistance, including allowing the Corps of Engineers to repair non-federal dams on a reimbursable basis. However, as illustrated above, the impact of a non-federal dam failure could have a tremendous impact on national interests. Without government funding and regulatory action, with respect to many dams, we are at Mother Nature's mercy. According to Charles Gardner, ASDSO President, "We need to get the message across that dam safety deserves a high priority (see WSW #664)."

Reclamation Act/Surplus Crops

On March 5, Representative Sam Gejdenson (D-CT), introduced the Irrigation Subsidy Reform Act of 1987 (H.R. 1443). The bill would amend the Reclamation Projects Act of 1939 to require the Secretary of Interior to charge full cost for the delivery of water used "in the production of any crop of an agricultural commodity for which an acreage reduction program is in effect under the provision of the Agricultural Act of 1949 (7 U.S.C. 1421 et sec.)." The term "full cost" would be defined by Section 202(3) of the Reclamation Reform Act of 1982 (43 U.S.C. 390(b)(3)). This change would apply to all new or amended contracts after the date of enactment. The Secretary would set the amount of the "full cost" payment, for the succeeding year, on or before July 1 of each year. In addition to Mr. Gejdenson, H.R. 1443 has twenty-one co-sponsors from the States of California, Connecticut, Illinois, Indiana, Iowa, Massachusetts, Michigan, Minnesota, Missouri, New York, Ohio, Pennsylvania, Vermont and Wisconsin. Given the apparent concern over subsidizing production of surplus crops, it is interesting to note that many of the above states have a vested interest in this issue. For FY84, federal expenditures for Commodity Credit Corporation price supports and related programs were highest in the following twelve states, which are listed by rank: California, Pennsylvania, Illinois, New York, Indiana, Michigan, Texas, Ohio, Kentucky, Louisiana, and Minnesota. The 99th Congress authorized a study of production of surplus crops in reclamation states in passing H.R. 3113, which also authorized an additional \$600M for the Bureau of Reclamation's Small Projects Loan Program (see WSW #648).

WESTERN STATES WATER COUNCIL

Water Policy Seminar

On Thursday, April 30, in conjunction with its 86th quarterly meetings, the Western States Water Council will sponsor a Water Policy Seminar in Washington, D.C. The Seminar will be held at the Hall of the States, Rooms 263-265, 444 North Capitol Street. The meeting is scheduled from 9:00 a.m. to 3:45 p.m. At 4:30 p.m., the Council will sponsor a reception in the Senate Dirksen Office Building. Topics to be considered are Groundwater Quality Protection, the Federal Role in Water Transfers, and FERC Hydropower Licensing and State Water Law. A variety of speakers have been invited to participate. Call (801) 521-2900 for more information.

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

SB 183
POUCH Y STATE CAPITOL
JUNEAU ALASKA 99811
907 465 3800

MEMORANDUM

March 27, 1987

SUBJECT: Sectional Analysis of SB 183
(Dams and reservoirs)

TO: Senator Arliss Sturgulewski
Chairman, Community and Regional Affairs
Committee

FROM: Teresa B. Cramer *TBC*
Legislative Counsel

You have requested a sectional analysis of the above described bill.

As a preliminary matter, I must advise you that a sectional analysis or summary of a bill should not be considered an authoritative interpretation of the bill and the bill itself is the best statement of its contents.

Section 1 imposes criminal penalties for knowingly making a false report to the Department of Natural Resources concerning the condition of a dam or reservoir.

Section 2 adds a new chapter concerning dam and reservoir safety.

Sec. 36.17.010 sets out the legislative purpose.

Sec. 46.17.020 gives the Department of Natural Resources responsibility for supervising the safety of dams and reservoirs.

Sec. 46.17.030 requires the department to adopt regulations and issue orders necessary to carry out the chapter.

Sec. 46.17.040 prohibits construction, repair, or removal of a dam or reservoir unless the department approves. Routine maintenance and operations are excepted.

Senator Sturgulewski

Page 2

March 27, 1987

Sec. 46.17.050 directs the department to inspect each dam and reservoir subject to the chapter once every five years and permits the department to inspect more frequently. The department may require the owner to perform the inspection or pay for the cost of an inspection performed by the department.

Sec. 46.17.060 permits the department to seek a search warrant to allow an inspection if the department has given two weeks' written notice. The department may enter premises without notice if a dam or reservoir is believed to be unsafe.

Sec. 46.17.070 sets out standards for the department's determination of whether a dam or reservoir constitutes or would constitute a danger to life or property.

Sec. 46.17.080 permits the department to seek an injunction and damages in enforcing the chapter.

Sec. 46.17.090 subjects a final action of the department to judicial review under the Administrative Procedure Act.

Sec. 46.17.100 permits the department to enter into cooperative agreements with other governments and prohibits municipalities from exercising powers that conflict with the powers and duties given the department. Under subsections (c) and (d), the chapter does not apply to a federally-owned or operated dam or reservoir and does not affect the powers of the Department of Environmental Conservation or the Department of Fish and Game.

Sec. 46.17.110 limits actions against the state. An action may be maintained against the state if the state negligently orders a dam owner to perform an action and the dam owner complies with the order but objected to it.

Sec. 46.17.120 acknowledges that the chapter does not relieve an owner of a dam or reservoir of the duties or liabilities incident to the ownership or operation of the dam or reservoir.

Sec. 46.17.150 imposes penalties on persons who knowingly violate the chapter, an approval, order, regulation, or requirement of the department, or who obstruct performance of duties.

Senator Sturgulewski
Page 3
March 27, 1987

Sec. 46.17.900 is a definition section.

Section 3 is an immediate effective date clause.

If I may be of further assistance, please advise.

TBC:mkr
m10/065

SB 183

March 30, 1987

The Honorable Arliss Sturgulewski
Sponsor of Senate Bill 183
Alaska State Legislature
P.O. Box V
Juneau, AK 99801

Dear Senator Sturgulewski:

Subject: Senate Bill 183, relating to supervision of safety of dams and reservoirs.

Position: The Department of Natural Resources recommends the passage of Senate Bill 183.

Background: Currently, there are 185 dams on Alaska's dam inventory. In 1981, the U.S. Department of the Army, Corps of Engineers, ended its dam safety program for non-federal dams in Alaska. There are but 20 federal dams in Alaska. The remaining dams are covered under a minimal dam safety program the Department of Natural Resources, division of land and water management, established through regulations. The department adopted regulations in 11 AAC 93 under the authority of several sections in AS 46.15, the Alaska Water Use Act, including a provision in AS 46.15.080 which gives the commissioner authority to regulate water diversions.

Alaska Water Resources Board resolution 84-4, dated March 14, 1984, recommended review of the existing statutory authority under which dams in the state are regulated by the division.

About half of the 50 states have enacted specific dam safety legislation, but most of these states did so in response to dam failures resulting in loss of life and extensive property damage. Clearly it would be advantageous for Alaska to have a well-founded, comprehensive dam safety statutory scheme and program in effect to prevent such tragedies from occurring here. SB 183 is based on the Model Law for State Supervision of Safety of Dams and Reservoirs drafted by the United States Committee on Large Dams of the International Commission on Large Dams.

Section 2, which contains the body of the bill, creates a new ch. 17 in AS 46. Proposed AS 46.17.010 first states the purpose of the chapter. It then makes the supervision of safety of dams and reservoirs the responsibility of the Department of Natural Resources. The commissioner of that department is directed to employ a qualified engineer experienced in the design and construction of dams and reservoirs to direct the dam safety program. Proposed AS 46.17.040 would make it unlawful for anyone to construct, enlarge, repair, alter, remove, maintain, operate, or abandon a dam or reservoir, as defined in the bill, except upon application to, and approval of, the department. To ensure that dams and reservoirs remain safe once constructed, the department is directed in proposed AS 46.17.050 to inspect or to require owners to inspect dams and reservoirs covered under the bill at least once every five years, or more frequently if necessary. To ensure that it can make adequate inspections, the department is also given authority, in proposed AS 46.17.060, to enter the private property on which the dam or reservoir is located as might be necessary to make the inspection. Proposed AS 46.17.050 also authorizes the department to require owners to bear the costs of inspection.

Proposed AS 46.17.070 sets out specific standards for determining the safety of a dam or reservoir. In addition, the department is allowed, by proposed AS 46.17.110, to enter into cooperative management agreements with municipal corporations and other state and federal agencies to effectuate its responsibilities under the bill. To ensure that the state's action in inspecting and regulating the operation of dams or reservoirs does not shift the liability of the private owner to the state for loss of life or property damage due to a dam or reservoir failure, proposed AS 46.17.120 bars any action against the state based on any purported act or omission of a state agent or employee connected with the dam safety program.

Section 1 of the bill amends AS 11.56.800(a), dealing with the crime of making a false report. A new paragraph (4) will make it a crime to file a false report with the Department of Natural Resources concerning the condition of a dam or reservoir. Additional criminal sanctions are also contained in sec. 2 of the bill in proposed AS 46.17.100, which would make it a class A misdemeanor to violate any provision of AS 46.17 or lawful order the department issues under AS 46.17.

The Honorable Arliss Sturgulewski -3- March 30, 1987

Recommendation: Given the importance of a good dam safety program to the State of Alaska, the Department of Natural Resources favors passage of this legislation.

Sincerely,

Judith M. Brady
Commissioner

cc: Senate Transportation Committee
George Sullivan
Rod Swope

No 203

FX

STATE OF ALASKA 1987 LEGISLATIVE SESSION
FISCAL NOTE

SENATE
BILL VERSION: SB 183 a
PUBLISH DATE: 4/3/87

REQUEST: _____

Revision Date: _____

Title: An act relating to dams and reservoirs

Sponsor: Seungulavak

Req. No: _____

Agency Affected: Natural Resources

BRU: Land and Water Management

Component: Land and water Public Use

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES	0	0	0	0	0	0
TRAVEL	0	0	0	0	0	0
CONTRACTUAL	0	0	0	0	0	0
SUPPLIES	0	0	0	0	0	0
EQUIPMENT	0	0	0	0	0	0
LAND & STRUCTURES	0	0	0	0	0	0
GRANTS, CLAIMS	0	0	0	0	0	0
MISCELLANEOUS	0	0	0	0	0	0
TOTAL OPERATING	0	0	0	0	0	0

CAPITAL	0	0	0	0	0	0
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REVENUE	0	0	0	0	0	0
---------	---	---	---	---	---	---

FUNDING: (Thousands of Dollars)

GENERAL FUND	0	0	0	0	0	0
FEDERAL FUNDS	0	65.0	65.0	65.0	65.0	65.0
OTHER	0	0	0	0	0	0
TOTAL	65.0	65.0	65.0	65.0	65.0	65.0

POSITIONS:

FULL-TIME	0	0	0	0	0	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

ANALYSIS :

Senate Bill No. 183 will qualify DNR's Dam Safety Program to qualify for at least 65.0 federal funding under P.L. 99-662 for five years. No increases in state expenditures will occur as a result of this legislation.

Prepared by: Kyle J. Cherry Phone: 562-3332
Division: Land and Water Management Date: 3/26/87

Approved by Commissioner: _____ Date: _____
Agency: _____

Distribution (by preparer):

- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)
- Senate Secretary

No 204
 FX

STATE OF ALASKA 1987 LEGISLATIVE SESSION
 FISCAL NOTE

SENATE

BILL VERSION: SB 183 b
 PUBLISH DATE: 4/3/87

REQUEST: _____

Revision Date: _____
 Title: Relating to dams and reservoirs

Agency Affected: Environmental Conservation
 BRU: N.A.

Sponsor: Senator Sturqulewski
 Requestor: Senator Jones--Transportation

Components: N.A.

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 39	FY 90	FY 91	FY 92
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANECUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS :

Prepared by: Randy Bayliss
 Division: Office of the Commissioner

Phone: 465-2600
 Date: March 17, 1987

Approved by Commissioner: _____
 Agency: Environmental Conservation

Date: 3/18/87

Distribution (by preparer):

- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)
- Senate Secretary

No. 205

STATE OF ALASKA 1987 LEGISLATIVE SESSION
 FISCAL NOTE

SENATE
 BILL VERSION: SB 183 c
 PUBLISH DATE: 4/3/87

REQUEST: _____
 Revision Date: _____
 Title: "An Act relating to dams and
 reservoirs..."
 Sponsor: Sen. Sturgulewski
 Requestor: Senate Transportation

Agency Affected: Department of Law
 BRU: Prosecution, Legal Services
 Components: Prosecution - All
Legal Services - Operations

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING		-0-	-0-	-0-	-0-	-0-

CAPITAL						
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REVENUE						
---------	--	--	--	--	--	--

FUNDING: (Thousands of Dollars)

GENERAL FUND		-0-	-0-	-0-	-0-	-0-
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME		-0-	-0-	-0-	-0-	-0-
PART-TIME						
TEMPORARY						

ANALYSIS :

Please see attached analysis.

Prepared by: Richard I. Pegues, Director Phone: 465-3672
 Division: Administrative Services Date: March 18, 1987
 Approved by Commissioner: Grace Berg Schaible, Atty. Gen. Date: March 18, 1987
 Agency: Department of Law

- Distribution (by preparer):
- Legislative Finance
 - Legislative Sponsor
 - Requestor
 - Office of Management and Budget
 - Impacted Agency(ies)
 - Senate Secretary

Alaska State Legislature

SB 183

SENATOR
ARLISS STURGULEWSKI

Chairman, Senate Community and Regional Affairs Committee
Vice-Chairman, Senate Judiciary Committee
Member, Senate Resources Committee



2957 SHELDON JACKSON STREET
ANCHORAGE, ALASKA 99503

While in Juneau
P. O. BOX V
JUNEAU, ALASKA 99811
(907) 465-3818

Senate

MEMORANDUM

April 10, 1987

TO: Senator Jack Coghill, Chairman
Senate Resources Committee

FROM: Senator Arliss Sturgulewski *AS*
Senate District F

RE: SB 183 "An Act relating to dams and reservoirs and providing for
an effective date."

Thank you for scheduling a hearing on SB 183 "An Act relating to dams and reservoirs and providing for an effective date."

Senate Bill 183 was before the legislature last year and extensive hearings were held. However at the end of last session the bill was still in the Senate Finance Committee. Senate Bill 183 sets up a formal system of regulation of dams by the Department of Natural Resources (DNR). Presently the DNR only has clear authority to regulate construction activities and no clear authority to monitor the safety of dams throughout the life of the dam. This legislation is based on a Model State Dam Safety Program sponsored by the Association of State Dam Safety Officials and the Council of State Governments. The main purpose of this legislation is to protect the public health and safety.

In order to assist states in the implementation of a dam safety program, the federal government will make funds available through PL 99-662. Alaska would be eligible to receive at least \$65,000 per year for the next five years. There is a zero fiscal impact on state funding.

I have enclosed a sectional analysis prepared by the Legislative Legal Services Division; a DNR position paper supporting this legislation; fiscal notes from the Departments of Natural Resources, Environmental Conservation, and Law; and a recent Wall Street Journal article discussing dam safety. My staff is available to assist if you need additional information.

Enclosures

SB 183

STATE OF ALASKA
THE LEGISLATURE

POUCHY STATE CAPITOL
JUNEAU ALASKA 99811
907 465 3800

LEGISLATIVE AFFAIRS AGENCY

MEMORANDUM

March 27, 1987

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Chairman, Community and Regional Affairs
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Senator Sturgulewski
Page 3
March 27, 1987

Sec. 46.17.900 is a definition section.

Section 3 is an immediate effective date clause.

If I may be of further assistance, please advise.

TBC:mkr
m10/065

SB 183

March 30, 1987

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Sponsor of Senate Bill 183
Alaska State Legislature
P.O. Box V
Juneau, AK 99801

Dear Senator Sturgulewski:

Subject: Senate Bill 183, relating to supervision of safety of dams and reservoirs.

Position: The Department of Natural Resources recommends the passage of Senate Bill 183.

Background: Currently, there are 185 dams on Alaska's dam inventory. In 1981, the U.S. Department of the Army, Corps of Engineers, ended its dam safety program for non-federal dams in Alaska. There are but 20 federal dams in Alaska. The remaining dams are covered under a minimal dam safety program the Department of Natural Resources, division of land and water management, established through regulations. The department adopted regulations in 11 AAC 93 under the authority of several sections in AS 46.15, the Alaska Water Use Act, including a provision in AS 46.15.080 which gives the commissioner authority to regulate water diversions.

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The Honorable Arliss Sturgulewski -3-

March 30, 1987

Recommendation: Given the importance of a good dam safety program to the State of Alaska, the Department of Natural Resources favors passage of this legislation.

Sincerely,

Judith M. Brady
Commissioner

cc: Senate Transportation Committee
George Sullivan
Rod Swope

No 203

JK

STATE OF ALASKA 1987 LEGISLATIVE SESSION
FISCAL NOTE

SENATE
BILL VERSION: SB 183 a
PUBLISH DATE: 4/3/87

REQUEST: _____

Revision Date: _____

Title: An act relating to dams and reservoirs

Sponsor: Sprunglauskj

Requestor: _____

Agency Affected: Natural Resources

BRU: Land and Water Management

Component: Land and Water Public Use

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES	0	0	0	0	0	0
TRAVEL	0	0	0	0	0	0
CONTRACTUAL	0	0	0	0	0	0
SUPPLIES	0	0	0	0	0	0
EQUIPMENT	0	0	0	0	0	0
LAND & STRUCTURES	0	0	0	0	0	0
GRANTS, CLAIMS	0	0	0	0	0	0
MISCELLANEOUS	0	0	0	0	0	0
TOTAL OPERATING	0	0	0	0	0	0

CAPITAL	0	0	0	0	0	0
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REVENUE	0	0	0	0	0	0
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FUNDING: (Thousands of Dollars)

GENERAL FUND	0	0	0	0	0	0
FEDERAL FUNDS	0	65.0	65.0	65.0	65.0	65.0
OTHER	0	0	0	0	0	0
TOTAL	65.0	65.0	65.0	65.0	65.0	65.0

POSITIONS:

FULL-TIME	0	0	0	0	0	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

ANALYSIS :

Senate Bill No. 183 will qualify DNR's Dam Safety Program to qualify for at least 65.0 federal funding under P.L. 99-662 for five years. No increases in state expenditures will occur as a result of this legislation.

Prepared by: Kyle J. Cherry Phone: 562-3332
Division: Land and Water Management Date: 3/26/87

Approved by Commissioner: _____ Date: _____
Agency: _____

- Distribution (by preparer):
- Legislative Finance
 - Legislative Sponsor
 - Requestor
 - Office of Management and Budget
 - Impacted Agency(ies)
 - Senate Secretary

No 204
 FX

STATE OF ALASKA 1987 LEGISLATIVE SESSION
 FISCAL NOTE

SENATE

BILL VERSION: SB 183 b

PUBLISH DATE: 4/3/87

REQUEST: _____

Revision Date: _____

Title: Relating to dams and reservoirs

Agency Affected: Environmental Conservation

BRU: N.A.

Sponsor: Senator Sturgulewski

Requestor: Senator Jones--Transportation

Components: N.A.

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-
REVENUE	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS :

Prepared by: Randy Bayliss

Phone: 465-2600

Division: Office of the Commissioner

Date: March 17, 1987


Approved by Commissioner: [Signature]

Date: 3/18/87

Agency: Environmental Conservation

Distribution (by preparer):

- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)
- Senate Secretary

No. 205


STATE OF ALASKA 1987 LEGISLATIVE SESSION
 FISCAL NOTE

SENATE
 BILL VERSION: SB 183 c
 PUBLISH DATE: 4/3/87

REQUEST: _____
 Revision Date: _____
 Title: "An Act relating to dams and reservoirs..."
 Sponsor: Sen. Sturgulewski
 Requestor: Senate Transportation

Agency Affected: Department of Law
 BRU: Prosecution, Legal Services
 Components: Prosecution - All
Legal Services - Operations

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING		-0-	-0-	-0-	-0-	-0-
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND		-0-	-0-	-0-	-0-	-0-
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME		-0-	-0-	-0-	-0-	-0-
PART-TIME						
TEMPORARY						

ANALYSIS :

Please see attached analysis.

Prepared by: Richard I. Pegues, Director Phone: 465-3672
 Division: Administrative Services Date: March 18, 1987
 Approved by Commissioner: Grace Berg Schaible, Atty. Gen. Date: March 18, 1987
 Agency: Department of Law

- Distribution (by preparer):
- Legislative Finance
 - Legislative Sponsor
 - Requestor
 - Office of Management and Budget
 - Impacted Agency(ies)
 - Senate Secretary

ALASKA STATE LEGISLATURE

SB 183

Sen. Lloyd Jones, Chairman
Sen. John B. "Jack" Coghill, Vice Chairman
Sen. Mitch Abood
Sen. Bettye Fahrenkamp
Sen. Tim Kelly



P.O. Box V
Juneau, AK 99811

907-465-4921

Senate Transportation Committee

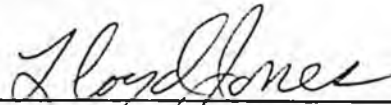
COMMITTEE REPORT

Madame President:

The transportation committee expresses that it is not the intent, either through Senate Bill 183, nor through regulations, that the bill affect settling ponds of small placer miners.

The transportation committee also asks to see and review the regulations that are promulgated to implement the legislation.

Sincerely,

 4/2/87

Senator Lloyd Jones, Chairman
Senate Transportation Committee

Flood Watch

Dams' Safety Worries Officials Who Believe Repairs Are Lagging

Earthquakes and Other Risks
Give Nightmares to Some
Despite a Recent Respite

Stitching Up a TVA Crack

By BRUCE INGERSOLL

Staff Reporter of THE WALL STREET JOURNAL
MONCKS CORNER, S.C. — The 1983 dam scare here is remembered as "the peril at Pinopolis."

On a languid summer morning, the West Pinopolis Dam suddenly sprang an enormous leak, setting off alarms in the powerhouse. While the police rapped on doors to evacuate downstream residents, emergency workers struggled to keep the huge dam from collapsing. They tried plugging the leak with weighted bales of hay. They tried steel plates. Increasingly desperate, they bought a furniture store's entire stock of mattresses, only to find them too buoyant. Finally, they slapped together a makeshift dam with pile-driven utility poles.

A disaster was averted—for the time being. But federal dam regulators worry that West Pinopolis is one of many dams around the country that would collapse if a severe earthquake hit. Hundreds of dams couldn't withstand a major flood. Thousands more have fallen into disrepair, some leaking or slumping so badly that they are in danger of collapse.

"One of these dams, Mother Luck isn't going to hold," warns William Bivins, the dam safety coordinator for the Federal Emergency Management Agency. "One of these high-hazard dams is going to pop at night when everybody is asleep. It will wipe out thousands of people."

Recent Dam Breaks

But to some top officials, warnings about dam disasters are overblown, and in most states public interest in dam safety is low. In the 1970s, nearly 500 people died in six major U.S. dam breaks, but in the 1980s the fatalities have been few in this country, though a 1985 dam break in Italy killed more than 220 people.

Meanwhile, dam-safety initiatives have been slowed by tight budgets, bureaucratic inertia and the lack of a political constituency. "All of our constituents are dead people," says safety advocate Bruce Tschantz, a professor of civil engineering at the University of Tennessee.

Of the 80,000 or so dams in the U.S., about 8,000 are owned or regulated by federal agencies. The rest are owned by farmers, ranchers, developers, utilities or states and municipalities. Most major dams are owned and maintained by big agencies such as the Pentagon's Army Corps of Engineers and the Interior Department's Bureau of Reclamation.

The bureau is still haunted by the 1975 collapse of the Teton Dam in Idaho as it was being filled for the first time, killing 11 people. One-fifth of the bureau's 300 dams, all in the West, are classified as unsafe. Critics say the bureau doesn't treat dam safety as a priority. Bureau officials disagree, but since 1980 the agency has spent only 11% of \$750 million authorized by Congress for safety "modifications."

Internal documents obtained from the Corps of Engineers, meanwhile, show that a superflood would overwhelm at least 20 of that agency's 600 dams, engulfing such communities as Houston and Valley City, N.D. The corps is also studying how well several structures, including two dikes on the Clemson University campus in South Carolina, would hold up in a major earthquake. If the dikes failed, the football stadium, dubbed "Death Valley" by Clemson's foes, would be swamped. Overall, "We are concerned about 36 dams," says Lloyd Duscha, the corps' deputy director of engineering and construction.

Remedial efforts have been limited, however. Some cost-conscious Reagan administration appointees haven't shared agency engineers' sense of urgency. "Bureaucratic engineers always try to figure out a way to perpetuate themselves and build up their budgets," asserts William Gianelli, who in recent years oversaw the corps as assistant Army secretary for civil works.

Underfunded and Undermanned

On the state level, the number of unsafe dams has been reduced to 1,948 from about 2,900 in 1981, according to a survey for the Federal Emergency Management Agency. Many dam owners simply dismantled their aging structures rather than make repairs. But the survey says that only 21 states have adequate regulatory programs and that the rest are underfunded and undermanned.

For Joseph Ellam, Pennsylvania's director of dam safety, the situation is unsettling. "Catastrophic failures have occurred before, and they will occur again," he warns. "With the exception of nuclear power plants, no man-made structure has a greater potential for killing a large number of people than a dam."

The West Pinopolis Dam, 30 miles from Charleston, S.C., is one such dam.

Although the dam now is in good repair, earthquake experts believe it would fail in the event of an earthquake as powerful as the devastating Charleston earthquake of 1886, which killed 36 persons and caused panic as far away as Cleveland.

If the dam failed, some 2,000 residents along the Cooper River "wouldn't have any time to run for their lives," says Ronald Corso, the director of hydropower licensing for the Federal Energy Regulatory Com-

Please Turn to Page 18, Column 1

Flood Watch: The Safety of Some Dams Worries Officials Who Believe Earthquakes Pose Big Threat

Continued From First Page

mission. The flood would engulf the Charleston Naval Yard and the Atlantic Fleet's nuclear-weapons arsenal as well as a major industrial corridor, causing \$1 billion in damage. It would also clog Charleston's harbor with silt, closing a key port for the Navy.

The dam is vulnerable to an extraordinary phenomenon known as "liquefaction," Mr. Corso says. Seismic shock waves could "liquefy" the sand in the dam's foundation, turning it into quicksand or "mush." The shuddering dam would quickly slump, spilling the waters of Lake Moultrie in a thunderous rush.

The dam's owner, South Carolina Public Service Authority, also known as Santee Cooper, calls the chance of such a disaster remote, but the state-owned utility, under federal pressure, has agreed to strengthen the dam. "We don't care where they get the money so long as they fix it," Mr. Corso says.

Other Worries

The energy regulatory commission has worried about more than 100 of the 2,000 dams it regulates and has ordered several utilities to make repairs. Montana Power Co., for one, is rehabilitating an ice-battered dam near Missoula to protect the Clark Fork River. It holds back tons of waste smelting waste in the bottom silt. Mr. Corso says, "If you dump that waste down the river, it will be the biggest mess known to mankind."

The Tennessee Valley Authority has pared its list of unsafe dams to 14 from 21. Fanning Fontana Dam in western North Carolina is a high priority. At 480 feet, Fontana is the tallest dam east of the Rocky Mountains. The upper part of the dam needs reinforcing against a major earthquake. And an alarming 100-foot-long crack in the concrete has reopened and requires restitching with cables.

In Wyoming, Reclamation Bureau officials are keeping close watch on the badly leaking Fontenelle Dam on the Green River. The same sort of seepage that caused a near-failure in 1965 is undermining the dam. The officials are keeping the reservoir level as low as possible, rather than risk deluging Green River. Wyo., (population: 13,000), but they admit to being at "Mother Nature's mercy."

Last summer, so much melted snow came down from the mountains that officials couldn't discharge water fast enough to keep the reservoir from refilling. "We baby-sat that dam night and day," says one Reclamation Bureau official. "We had two bulldozer operators there 24 hours a day."

Support Is Lacking

For years, federal officials in the field have been warning their superiors about Fontenelle and other deteriorating dams. But cumbersome cost-sharing arrangements and assistance from the White House budget office have limited the Reclamation Bureau's efforts to a few projects. While the agency has begun budgeting more money for dam safety, many other projects will have to wait.

It takes a long time to get momentum building behind a program, especially when it doesn't have high administration

support," says Neil Parrett, the bureau's chief of dam design. "We all could do better. But I celebrate the progress we've made to reduce the threat out there."

The Reclamation Bureau, like most of its regulatory brethren, has been slow to bring its substandard dams into compliance with the latest safety guidelines, as ordered by President Jimmy Carter in 1979. Federal dams should be stable enough to withstand the "maximum credible earthquake," usually defined as the quake from a known source like California's San Andreas Fault that could cause the most severe "inbratory ground motion" at a dam site.

Under the guidelines, federal dams should also have enough spillway capacity to discharge the "probable" maximum flood. "Hydrologists calculate such a flood on the basis of the worst combination of meteorological and hydrological events likely to occur in watershed. In the Rockies, for example, it could be heavy rains mixed with a record snowmelt.

The 'Overtopping' Problem

Several Reclamation Bureau dams, including four on the Salt River and two on the Verde River in Arizona, are vulnerable to "overtopping" by a superflood. The crucial dam is a national historic monument, Theodore Roosevelt Dam. If it were overtopped by the probable "maximum flood" on the Salt, the top of the dam would crumble, triggering a "domino effect," says the bureau's Mr. Parrett.

The flood would heavily damage two downriver dams, knock out a third and surge on toward Phoenix. "Phoenix gets drowned," Mr. Parrett says. An estimated 250,000 people would be flooded; property damages would hit \$9.5 billion.

The Corps of Engineers has made even less headway than the Reclamation Bureau, largely because of budget ceilings and high-level skepticism at the Pentagon about probable maximum floods. The corps under Mr. Gianelli undertook only two dam modifications between 1981 and 1984. In contrast, the much smaller TVA started five. Mr. Gianelli, now an engineering consultant in California, says that the corps could never explain to his satisfaction how it calculated the probable maximum flood.

Prado Dam, perched in a canyon above suburban Los Angeles, is one project that Mr. Gianelli held up. If the dam failed, the probable maximum flood on the Santa Ana River would inundate 1.3 million residents in Anaheim and other suburbs and cause as much as \$40 billion in damages, mostly in Orange County, according to the corps's risk assessment.

Mr. Gianelli, who served as California's water resources director under Gov. Ronald Reagan, remains unpersuaded. "That dam has been there 50 years," he says. "It has never filled to the point where the spillway is even used. You fix a dam if it's leaking."

Delaying Repairs

In the private sector, meanwhile, dam safety continues to lag. Some farmers scoff at warnings that the dams they built with the Soil Conservation Service's assistance are about to flood out their neighbors. And many corporate dam owners put off costly

repairs.

"It's the last place anybody wants to spend money," says Gerald W. Farquhar, a Washington attorney. "Everybody says it'll be the other fellow's dam that goes."

Among state governments, money for regulating dams remains tight. While California leads the nation with a \$3.8 million budget and a 60-person staff, most states make do with much less—on average, \$255,000 a year. Some states, including Delaware, Alabama and Hawaii, don't yet have a semblance of a dam-safety program.

Pennsylvania, however, has accomplished more than most federal agencies, whittling its backlog of 208 unsafe dams to 72 in five years. More than \$50 million, including low-interest state loans, has gone into dam repairs, usually under consent agreements with the state. The Pennsylvania Gas & Water Co. has agreed to fix 16 water-supply dams, while the Greater Johnstown Water Authority has promised to fix or dismantle the Salt Lick Dam near the site of a famous dam-break nearly a century ago.

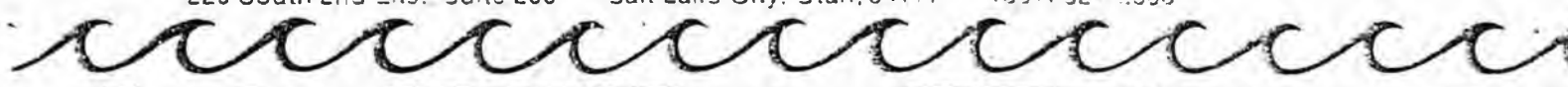
"If Salt Lick were to fail," says the state's Mr. Ellum, "it would be as bad as the great Johnstown Flood of 1889, the greatest catastrophe in U.S. history," that swept 2,200 persons to their deaths.

WESTERN STATES WATER



SB
183

220 South 2nd East, Suite 200 Salt Lake City, Utah, 84111 (801) 521-2900



A weekly report prepared by the staff of the Western States Water Council

Tony Willardson - Editor

WATER RESOURCES

Issue #671, March 27, 1987

Dam Safety

On March 19, the Wall Street Journal carried a front page article on dam safety. It addressed progress and problems in current federal and state programs. Of some 80,000 U.S. dams, about 10% are owned or regulated by federal agencies. The rest are controlled by state and local governments and private interests. On the state level, a Federal Emergency Management Agency (FEMA) report lists 1948 unsafe dams, down from 2,900 in 1981. California's regulatory program involves a staff of 60 and a \$3.5M budget. Pennsylvania also has an exemplary program. Over five years, the number of unsafe dams in the state has been reduced from 208 to 72, in part with the help of \$50M in low interest state loans, usually under consent agreements. However, nationally, state program expenditures average \$265,000 a year. The FEMA survey found only 21 states with adequate regulatory dam safety programs. Many are underfunded or undermanned. Alabama, Delaware and Hawaii have no dam safety programs. During this era of tight budgets, expenditures for dam safety programs or repairs are not always a high priority. The Corps FY88 budget request includes no funding for the newly authorized non-federal dam safety program grants under P.L. 99-662. Further, from 1981 to 1984, the Corps of Engineers undertook only two safety related dam modifications. Reportedly 20% of the Bureau of Reclamation's 300 dams are classified as unsafe. While the Bureau has increased its request for dam safety funds, since 1980 only about 11% of \$750M authorized for safety modifications has been spent.

High hazard dams, or those where failure would mean the loss of life, are of greatest concern. Political pressure for federal action probably peaked after the 1976 Teton Dam disaster in Idaho, which killed eleven people. The article notes that in the 1970's, "nearly 500 people died in six major U.S. dam breaks." There have been few fatalities in the 1980's. However, according to William Bivins, FEMA Dam Safety Coordinator, "One of these times, Mother Luck isn't going to hold. One of these high hazard dams is going to pop at night when everyone is asleep in bed. It will wipe out hundreds of people." Joseph Ellam, Pennsylvania's Director of Dam Safety and past president of the Association of State Dam Safety Officials (ASDSO), notes, "Catastrophic failures have occurred before and they will occur again. With the exception of nuclear powerplants, no man-made structure has a greater potential for killing a large number of people than a dam." In Pennsylvania, the Greater Johnstown Water Authority is under order to fix or dismantle its Salt Lick Dam. The dam is located near the site where a dam failed during the great Johnstown flood of 1889, which killed 2,200 people.

How safe is safe? This question is not easily answered. Federal guidelines require federal dams to withstand the "maximum credible earthquake," and have a spillway capacity to pass the "probable maximum flood." Defining and implementing these requirements leaves substantial room for professional disagreement. William Gianelli, former Assistant Secretary of the Army for Civil Works and former Director of the California Department of Water Resources, states the Corps could never explain to his satisfaction how it calculated the probable maximum flood. According to the Corps, if Prado Dam on the Santa Anna River above Los Angeles failed during the probable maximum flood, it would inundate 1.3 million homes with \$40B in damages. However, Gianelli notes, "That dam has been there fifty years. It has never filled to the point where the spillway is even used. You fix a dam if it's leaking." In 1983, the West Pinopolos Dam in South Carolina suddenly sprang an enormous leak. While police evacuated downstream residents, emergency personnel worked feverishly to stop

the leak, finally using a makeshift dam of pile-driven utility poles. Owned by the South Carolina Public Service Authority, a state-owned utility, the dam is 30 miles above Charleston on the Cooper River. According to Ronald Corso, Director of the Inspections Division for the Federal Energy Regulatory Commission, if the dam failed, some 2,000 residents "wouldn't have time to run for their lives." While the dam is now in good repair, Corso says an extraordinary earthquake, such as hit Charleston in 1886, could liquefy the dam's foundation. The resulting flood would cause an estimated \$1B in damages to a major industrial corridor, the Charleston Naval Yard and the Atlantic Fleet's Nuclear-weapons Arsenal, finally clogging Charleston Harbor with silt and closing this key Navy port. Under federal pressure, the utility has agreed to strengthen the dam. According to Corso, "We don't care where they get the money, so long as they fix it."

This raises another problem. How do you finance needed dam safety repair work? In 1984, a survey by the Western States Water Council identified 665 dams in fifteen western states with safety problems. The rough cost estimate for rehabilitation totaled over \$316M. Private financial sources are often limited or unavailable. Dam safety work seldom produces new revenues to pay back bonds. State and local budgets are also tight. The Reagan Administration has opposed federal funding for non-federal dam safety work. As a result, last year Congress dropped from the Corps omnibus legislation provisions authorizing federal financial and technical assistance, including allowing the Corps of Engineers to repair non-federal dams on a reimbursable basis. However, as illustrated above, the impact of a non-federal dam failure could have a tremendous impact on national interests. Without government funding and regulatory action, with respect to many dams, we are at Mother Nature's mercy. According to Charles Gardner, ASDSO President, "We need to get the message across that dam safety deserves a high priority (see WSW #664)."

Reclamation Act/Surplus Crops

On March 5, Representative Sam Gejdenson (D-CT), introduced the Irrigation Subsidy Reform Act of 1987 (H.R. 1443). The bill would amend the Reclamation Projects Act of 1939 to require the Secretary of Interior to charge full cost for the delivery of water used "in the production of any crop of an agricultural commodity for which an acreage reduction program is in effect under the provision of the Agricultural Act of 1949 (7 U.S.C. 1421 et sec.)." The term "full cost" would be defined by Section 202(3) of the Reclamation Reform Act of 1982 (43 U.S.C. 390(b)(3)). This change would apply to all new or amended contracts after the date of enactment. The Secretary would set the amount of the "full cost" payment, for the succeeding year, on or before July 1 of each year. In addition to Mr. Gejdenson, H.R. 1443 has twenty-one co-sponsors from the States of California, Connecticut, Illinois, Indiana, Iowa, Massachusetts, Michigan, Minnesota, Missouri, New York, Ohio, Pennsylvania, Vermont and Wisconsin. Given the apparent concern over subsidizing production of surplus crops, it is interesting to note that many of the above states have a vested interest in this issue. For FY84, federal expenditures for Commodity Credit Corporation price supports and related programs were highest in the following twelve states, which are listed by rank: California, Pennsylvania, Illinois, New York, Indiana, Michigan, Texas, Ohio, Kentucky, Louisiana, and Minnesota. The 99th Congress authorized a study of production of surplus crops in reclamation states in passing H.R. 3113, which also authorized an additional \$600M for the Bureau of Reclamation's Small Projects Loan Program (see WSW #648).

WESTERN STATES WATER COUNCIL

Water Policy Seminar

On Thursday, April 30, in conjunction with its 86th quarterly meetings, the Western States Water Council will sponsor a Water Policy Seminar in Washington, D.C. The Seminar will be held at the Hall of the States, Rooms 263-265, 444 North Capitol Street. The meeting is scheduled from 9:00 a.m. to 3:45 p.m. At 4:30 p.m., the Council will sponsor a reception in the Senate Dirksen Office Building. Topics to be considered are Groundwater Quality Protection, the Federal Role in Water Transfers, and FERC Hydropower Licensing and State Water Law. A variety of speakers have been invited to participate. Call (801) 521-2800 for more information.