

## DOCUMENT RESUME

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The Implementation of the National Dam Inspection Act of 1972.  
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Testimony before the House Committee on Government Operations:  
Conservation, Energy and Natural Resources Subcommittee; by  
Henry Eschwege, Director, Community and Economic Development  
Div.

Issue Area: Water and Water Related Programs (2500).

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Subcommittee.

Authority: National Dam Inspection Act of 1972 (P.L. 92-367).

To date, the Army Corps of Engineers (Corps) has made no actual inspections of dams pursuant to the National Dam Inspection Act of 1972. After the rejection, in December 1972, by the Office of Management and Budget of a dam inspection budget proposal, no appropriation was made under the Act except for collecting inventory on dams. Inventory data were collected that concentrated on location, size, and type of dams. There were inaccuracies and inconsistencies: some dams were listed more than once; some had incorrect descriptive information; and some dams which should have been listed in the inventory were not. The Corps' recommendations for a national dam safety plan would require the States to voluntarily make important and expensive improvements to their programs. Some proposal for financial or other incentives would be necessary. The estimated cost of the Corps program would be about seven times the amount currently spent for dam safety across the country. Sizeable costs would also be involved in remedial actions and assistance after dam failures. Alternatives for carrying out a dam safety program include: establishing a national dam safety insurance program; formulating uniform minimum inspection guidelines; encouraging Federal and State cooperation; making a safety program prerequisite to Federal funding; selecting a private agency to perform inspections; adopting zoning laws to prevent building downstream from dams; and devising warning systems for existing communities. (QH)

00522

UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

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STATEMENT OF  
HENRY ESCHWEGE, DIRECTOR  
COMMUNITY AND ECONOMIC DEVELOPMENT DIVISION  
UNITED STATES GENERAL ACCOUNTING OFFICE  
BEFORE THE  
SUBCOMMITTEE ON CONSERVATION, ENERGY, AND NATURAL RESOURCES  
OF THE  
*Honor* COMMITTEE ON GOVERNMENT OPERATIONS  
ON  
THE IMPLEMENTATION OF THE NATIONAL DAM  
INSPECTION ACT OF 1972

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

WE ARE HERE TODAY AT YOUR REQUEST TO DISCUSS THE PROGRESS BEING MADE IN IMPLEMENTING THE NATIONAL DAM INSPECTION ACT OF 1972 (P.L. 92-367). I WILL COMMENT FIRST ON THE BACKGROUND OF THE ACT, AND THEN DISCUSS OUR OBSERVATIONS TO DATE ON THE IMPLEMENTATION OF THE ACT BY THE SECRETARY OF THE ARMY. I WOULD LIKE TO POINT OUT, HOWEVER, THAT OUR WORK IS NOT YET COMPLETED AND THE RESPONSIBLE AGENCIES HAVE NOT BEEN GIVEN AN OPPORTUNITY TO FORMALLY COMMENT ON OUR FINDINGS.

BACKGROUND OF THE ACT

IN THE EARLY 1970'S SEVERAL EVENTS PROMPTED THE PASSAGE OF LEGISLATION AIMED AT ESTABLISHING A NATIONAL PROGRAM TO PROTECT HUMAN LIFE AND PROPERTY FROM THE HAZARDS OF IMPROPERLY CONSTRUCTED OR POORLY MAINTAINED WATER STORAGE DAMS.

--IN FEBRUARY 1971, DURING THE SAN FERNANDO EARTHQUAKE, THE LOWER VAN NORMAN DAM ALMOST FAILED. THIS THREATENED THE ADJACENT DOWNSTREAM COMMUNITY OF 80,000 PEOPLE WHICH WOULD HAVE BEEN INUNDATED.

--AS A RESULT OF THE FAILURE OF AN UNENGINEERED COAL WASTE DAM, THE BUFFALO CREEK, WEST VIRGINIA, DISASTER OF FEBRUARY 26, 1972, RESULTED IN 125 LIVES LOST, DAMAGE OF OVER \$50 MILLION, AND 4,000 PEOPLE LEFT HOMELESS.

--IN JUNE 1972, 230 PEOPLE WERE KILLED BY A FLOOD NEAR RAPID CITY, SOUTH DAKOTA, WHEN THE CANYON LAKE DAM FAILED AS A RESULT OF UNUSUALLY HEAVY RAINS. DAMAGE WAS SET AT OVER \$100 MILLION DOLLARS.

--ALSO, IN JUNE 1972, HURRICANE AGNES CAUSED EXTREMELY HEAVY RAINFALL RESULTING IN UNUSUALLY HEAVY FLOODING IN THE NORTH-EASTERN UNITED STATES. A LARGE NUMBER OF DAMS WERE THREATENED, SOME OF WHICH WERE OVERTOPPED AND DAMAGED.

THESE EVENTS FOCUSED PUBLIC CONCERN ON THE POTENTIAL HAZARDS POSED BY WATER STORAGE DAMS. HEARINGS WERE HELD IN THE LATE SPRING AND SUMMER OF 1972 AND THE CONGRESS QUICKLY PASSED FEDERAL LEGISLATION AIMED AT MINIMIZING HAZARDS TO HUMAN LIFE AND PROPERTY.

ON AUGUST 8, 1972, THE PRESIDENT SIGNED PUBLIC LAW 92-367. UNDER THIS LAW THE SECRETARY OF THE ARMY, ACTING THROUGH THE CORPS OF ENGINEERS, WAS DIRECTED TO INSPECT ALL DAMS IN THE UNITED STATES EXCEPT (1) DAMS UNDER THE JURISDICTION OF THE BUREAU OF RECLAMATION, THE TENNESSEE VALLEY AUTHORITY, AND THE INTERNATIONAL BOUNDARY AND WATER COMMISSION, (2) DAMS CONSTRUCTED PURSUANT TO LICENSES ISSUED UNDER THE AUTHORITY OF THE FEDERAL POWER ACT, (3) DAMS WHICH HAD BEEN INSPECTED BY A STATE AGENCY WITHIN THE 12-MONTH PERIOD IMMEDIATELY PRECEDING THE ENACTMENT OF THE LAW AND FOR WHICH THE GOVERNOR OF THE RESPECTIVE STATE REQUESTED EXCLUSION, AND (4) DAMS

WHICH THE SECRETARY OF THE ARMY DETERMINED DO NOT POSE ANY THREAT TO HUMAN LIFE AND PROPERTY. THE SECRETARY WAS ALSO REQUIRED TO REPORT ANY POTENTIALLY DANGEROUS CONDITIONS TO THE CONCERNED STATE GOVERNORS AND, UPON REQUEST, TO PROVIDE TECHNICAL ADVICE RELATED TO THE REMEDIAL MEASURES NECESSARY TO RECTIFY OR ELIMINATE ANY DANGEROUS CONDITIONS.

THE LAW FURTHER REQUIRED THE SECRETARY TO REPORT TO THE CONGRESS BY JULY 1, 1974, ON HIS ACTIVITIES UNDER THE LAW. THE REPORT WAS TO INCLUDE, BUT NOT BE LIMITED TO (1) AN INVENTORY OF ALL DAMS LOCATED IN THE UNITED STATES, (2) A REVIEW OF EACH INSPECTION MADE, AND (3) RECOMMENDATIONS FOR A COMPREHENSIVE NATIONAL PROGRAM FOR THE INSPECTION AND REGULATION OF DAMS FOR SAFETY PURPOSES, INDICATING THE RESPECTIVE RESPONSIBILITIES WHICH SHOULD BE ASSUMED BY FEDERAL, STATE, AND LOCAL GOVERNMENTS AND BY PUBLIC AND PRIVATE INTERESTS.

THE LAW DEFINED THE TERM "DAM" TO MEAN ANY ARTIFICIAL BARRIER WHICH IMPOUNDS OR DIVERTS WATER AND WHICH IS 25 OR MORE FEET IN HEIGHT OR HAS AN IMPOUNDING CAPACITY OF 50 OR MORE ACRE-FEET. THE LAW SPECIFICALLY EXCLUDED ANY BARRIER WHICH IS SIX FEET OR LESS IN HEIGHT, REGARDLESS OF STORAGE CAPACITY, AND BARRIERS WHICH HAVE AN IMPOUNDING CAPACITY OF LESS THAN 15 ACRE-FEET, REGARDLESS OF HEIGHT.

THE ACTING SECRETARY OF THE ARMY, BY LETTER DATED JULY 24, 1974, ADVISED THE CONGRESS THAT THE CORPS WAS (1) COMPILING AN INVENTORY OF ALL DAMS IN THE NATION, (2) SURVEYING THE FEDERAL AND STATES' DAM SAFETY INSPECTION PROGRAMS, (3) DEVELOPING GUIDELINES FOR DAM INSPECTIONS, AND (4) FORMULATING RECOMMENDATIONS FOR A NATIONAL PROGRAM FOR THE REGULATION AND INSPECTION OF DAMS FOR SAFETY PURPOSES. THE ACTING SECRETARY SAID THAT WHILE THE AUTHORIZING LEGISLATION

PROVIDED FOR THE INSPECTION OF NON-FEDERAL DAMS, NO SUCH INSPECTIONS HAD BEEN MADE, AND NONE WERE PLANNED, BECAUSE THE CORPS BELIEVED THAT THE STATES SHOULD PERFORM SUCH INSPECTIONS AS PART OF THEIR NORMAL RESPONSIBILITIES.

EARLIER, IN FEBRUARY 1973, THE CORPS HAD ADVISED THE HOUSE COMMITTEE ON APPROPRIATIONS, SUBCOMMITTEE ON PUBLIC WORKS, THAT IT DID NOT INTEND TO IMPLEMENT THAT SECTION OF THE LAW WHICH PERTAINED TO ACTUAL INSPECTION OF NON-FEDERAL DAMS. NO REQUESTS WERE MADE TO THE CONGRESS FOR APPROPRIATIONS FOR SUCH INSPECTIONS.

IN JUNE 1975, THE CHIEF OF ENGINEERS SUBMITTED TO THE SECRETARY OF THE ARMY A FIVE VOLUME DOCUMENT CONTAINING HIS PROPOSED "NATIONAL PROGRAM OF INSPECTION OF DAMS." DRAFT LEGISLATION FOR A DAM SAFETY PROGRAM WAS SUBMITTED BY THE CHIEF OF ENGINEERS TO THE ASSISTANT SECRETARY OF THE ARMY (CIVIL FUNCTIONS) IN DECEMBER 1975.

IN MARCH 1976, THE SECRETARY OF THE ARMY SUBMITTED TO THE OFFICE OF MANAGEMENT AND BUDGET (OMB) ALL FIVE VOLUMES AND DRAFT LEGISLATION RECOMMENDING THAT THE CORPS' PROPOSED NATIONAL PROGRAM OF DAM SAFETY BE IMPLEMENTED. FOUR OF THE VOLUMES, CONTAINING THE INVENTORY OF DAMS, WERE RELEASED TO THE CONGRESS, FEDERAL AGENCIES, AND STATES ON APRIL 2, 1976. ON NOVEMBER 16, 1976, THE DRAFT LEGISLATION AND THE FIFTH VOLUME, WHICH CONTAINED THE CORPS' RECOMMENDATIONS, WERE RELEASED TO THE CONGRESS.

WITHIN THE PAST YEAR THE FAILURES OF TWO DAMS HAVE REFOCUSED PUBLIC CONCERN ON THE POTENTIAL HAZARDS POSED BY WATER STORAGE DAMS:

--ON FEBRUARY 22, 1976, A 30-FOOT HIGH EARTHEN DAM ON A PRIVATE LAKE GAVE WAY AND WATER LUNGED DOWN NEWFOUND CREEK NEAR

CANTON, NORTH CAROLINA. AS A RESULT OF THIS FLOOD, FOUR PEOPLE WERE KILLED, 6 HOMES WERE DAMAGED OR DESTROYED, AND DAMAGE WAS ESTIMATED AT \$115,600.

--ON JUNE 5, 1976, THE BUREAU OF RECLAMATION'S 300-FOOT HIGH TETON DAM NEAR NEWDALE, IDAHO, COLLAPSED UNLEASHING 80 BILLION GALLONS OF WATER. ELEVEN PEOPLE WERE KILLED, AND MORE THAN A THOUSAND WERE INJURED. SEVERAL COMMUNITIES WERE DEVASTATED AND PROPERTY DAMAGE ESTIMATES RANGED FROM \$400 MILLION TO A BILLION DOLLARS.

SUMMARY OF GAO OBSERVATIONS ON -  
IMPLEMENTATION OF THE ACT

THE REMAINDER OF MY STATEMENT WILL DISCUSS ACTIONS WHICH THE SECRETARY OF THE ARMY, ACTING THROUGH THE CORPS, HAS TAKEN PURSUANT TO THE 1972 LAW. OUR OBSERVATIONS RELATE TO THE: (1) DECISION NOT TO INSPECT DAMS, (2) ACTIONS TO DEVELOP A NATIONAL DAM INVENTORY, (3) CORPS' RECOMMENDATIONS FOR A NATIONAL DAM SAFETY PROGRAM, (4) ESTIMATED COST OF INSPECTIONS, AND (5) ALTERNATIVE PROPOSALS TO THE CORPS' RECOMMENDED PROGRAM. OUR OBSERVATIONS, I WOULD STRESS AGAIN, ARE NECESSARILY TENTATIVE SINCE WE HAVE NOT COMPLETED OUR WORK.

DECISION NOT TO INSPECT DAMS

TO DATE, THE CORPS OF ENGINEERS HAS MADE NO ACTUAL INSPECTIONS OF DAMS PURSUANT TO THE NATIONAL DAM INSPECTION ACT.

CORPS OFFICIALS ADVISED US THAT THEY HAD ORIGINALLY INTENDED TO UNDERTAKE A DAM INSPECTION PROGRAM. IN DECEMBER 1972 A BUDGET PROPOSAL WAS SUBMITTED TO OMB FOR THE NECESSARY FUNDS. THEIR INTENTION WAS TO BEGIN INSPECTION ACTIVITIES WITH A SAMPLING OF DAMS. THE FUNDING PROPOSAL WAS REJECTED BY OMB AND NO APPROPRIATION REQUEST WAS THERE-

AFTER MADE TO THE CONGRESS UNDER P.L. 92-367 EXCEPT FOR COLLECTING INVENTORY DATA ON DAMS.

IN JANUARY 1973, OMB ISSUED A POLICY STATEMENT DIRECTING THE CORPS TO FULFILL ALL CONDITIONS REQUIRED BY THE LAW, EXCEPT THAT INSPECTIONS, TO THE EXTENT THERE WERE ANY, WERE TO BE ACCOMPLISHED BY THE CONCERNED STATES.

WITH REGARD TO THE NEED FOR THE INSPECTION OF DAMS, WE NOTED THAT IN ITS 1972 REPORT ON THE PROPOSED NATIONAL PROGRAM FOR INSPECTION OF DAMS, THE COMMITTEE ON PUBLIC WORKS STATED THAT THERE WAS NO UNDERSTANDING OF THE SCOPE AND NATURE OF THE PROBLEM OF DAM SAFETY AND THEREFORE THERE WAS NO WAY TO DETERMINE THE DANGERS THAT EXISTED OR THE TYPE OF REMEDIAL ACTION NEEDED.

SUBSEQUENT TO THE BUFFALO CREEK DISASTER THE CORPS INSPECTED 687 COAL MINE REFUSE IMPOUNDMENTS BETWEEN 1972 AND 1975, HOWEVER, NO INSPECTIONS HAVE BEEN MADE BY THE CORPS PURSUANT TO P.L. 92-367. THEREFORE, THE SITUATION DESCRIBED IN THE COMMITTEE REPORT APPEARS TO US TO REMAIN ESSENTIALLY UNCHANGED TODAY.

CORPS OFFICIALS TOLD US THAT, UNLESS INSPECTIONS ARE MADE, THEY DO NOT KNOW WHAT DANGERS EXIST IN DAMS IN THE UNITED STATES. THEY TOLD US ALSO THAT A SAMPLING OF DAM INSPECTIONS WOULD HAVE HELPED IN THE FORMULATION OF RECOMMENDATIONS FOR A NATIONAL DAM SAFETY PROGRAM.

#### ACTIONS TO DEVELOP A NATIONAL DAM INVENTORY

PURSUANT TO THE 1972 LAW, THE CORPS DEVELOPED AN INVENTORY OF APPROXIMATELY 49,000 DAMS LOCATED IN THE 50 STATES AND FOUR U.S. TERRITORIES. THE DATA FOR THE DAM INVENTORY WAS GATHERED BY FEDERAL AND STATE AGENCIES, AND PRIVATE ENGINEERING FIRMS UNDER CONTRACT WITH THE CORPS OF ENGINEERS. THEY SUBMITTED THE INVENTORY DATA ON A TWO-

PART INVENTORY FORM PREPARED BY THE CORPS. PART I INCLUDED INFORMATION ON LOCATION, SIZE, AND TYPE OF DAMS, AND PART II CONTAINED OTHER INFORMATION INCLUDING DOWNSTREAM HAZARDS AND PAST INSPECTIONS.

BECAUSE OF FUND LIMITATIONS, THE CORPS DISCOURAGED DAM SITE VISITS FOR INVENTORYING PURPOSES AND REQUIRED THE COMPLETION ONLY OF PART I OF THE INVENTORY DATA FORM, USING AVAILABLE INFORMATION AND ESTIMATES. THE CORPS SAID THAT NO FUNDS SHOULD BE SPENT FOR PART II OF THE INVENTORY DATA. PART II DATA WAS TO BE COLLECTED ONLY IF THE INFORMATION WAS READILY AVAILABLE.

IN 1973, CORPS OFFICIALS STATED IN AN INTERNAL MEMORANDUM THAT SUBMISSION OF ALL PART I AND II DATA WOULD RESULT IN A "FIRST CLASS" INVENTORY AT AN ESTIMATED COST OF \$7.4 MILLION. HOWEVER, THEY SAID THAT A "BARE BONES" INVENTORY (EXCLUDING MOST OF THE INFORMATION IN PART II) COULD BE COMPILED FOR AN ESTIMATED \$3.4 MILLION. THE LESSER AMOUNT WAS SUBSEQUENTLY REQUESTED AND WAS APPROPRIATED BY THE CONGRESS OVER A 3-YEAR PERIOD.

BECAUSE OF THE DECISION TO CONCENTRATE ON COLLECTING INFORMATION REQUESTED IN PART I OF THE INVENTORY DATA FORM, AT LEAST ONE IMPORTANT ITEM OF INFORMATION, THE POTENTIAL DOWNSTREAM HAZARD CLASSIFICATION, RECEIVED ONLY CURSORY ATTENTION IN MANY CASES. IT WAS INCLUDED IN THE INFORMATION TO BE OBTAINED IN PART II OF THE INVENTORY DATA FORM AND THIS INFORMATION WAS USED BY THE CORPS TO DETERMINE WHICH DAMS POSED THE HIGHEST POTENTIAL HAZARDS AND WARRANTED IMMEDIATE INSPECTION.

THE ACCURACY OF THE HAZARD CLASSIFICATIONS ASSIGNED TO THE DAMS IS QUESTIONABLE, IN OUR OPINION, BECAUSE OF OMISSIONS (19 PERCENT OF THE DAMS WERE NOT CLASSIFIED), HAZARD DEFINITIONS WERE AMBIGUOUS,

INCONSISTENT PROCEDURES WERE USED TO COLLECT INFORMATION, AND THE INFORMATION USED WAS NOT RELIABLE.

MOST OF THE DATA INCLUDED IN THE FINAL INVENTORY COMPILATION CAME FROM PART I OF THE INVENTORY DATA FORM AND CORPS OFFICIALS TOLD US THAT THEY CONSIDER IT TO BE ABOUT 90 PERCENT ACCURATE. HOWEVER, FOR THE MOST PART, THE CORPS HAS NOT VERIFIED THIS DATA. MANY FEDERAL AND STATE OFFICIALS TOLD US THAT THE ONLY RELIABLE METHOD OF VERIFYING INVENTORY DATA IS TO VISIT EACH DAM SITE.

WE DID NOT ATTEMPT TO DETERMINE THE OVERALL ACCURACY OF THE INVENTORY. HOWEVER, WE DID FIND CERTAIN INACCURACIES AND INCONSISTENCIES. SOME DAMS, FOR EXAMPLE, WERE LISTED MORE THAN ONCE, SOME HAD INCORRECT DESCRIPTIVE INFORMATION ON THE INVENTORY DATA FORM, AND SOME DAMS WHICH SHOULD HAVE BEEN LISTED IN THE INVENTORY WERE NOT. CERTAIN STATE AND FOREST SERVICE OFFICIALS TOLD US THAT THERE ARE MANY DAMS WHICH ARE NOT INCLUDED IN THE INVENTORY BECAUSE THEY ARE TOO SMALL TO MEET THE CRITERIA PRESCRIBED BY THE LAW, BUT WHICH COULD BE HAZARDOUS IF THEY WERE TO FAIL.

CORPS RECOMMENDATIONS FOR A  
NATIONAL DAM SAFETY PROGRAM

THE CORPS' REPORT TO THE CONGRESS OF NOVEMBER 16, 1976,  
RECOMMENDED THAT:

- A NATIONAL DAM SAFETY PROGRAM SHOULD BE IMPLEMENTED BY ENCOURAGING ALL STATES AND TERRITORIES TO PURSUE INDIVIDUAL DAM SAFETY PROGRAMS ENCOMPASSING ALL DAMS NOT UNDER FEDERAL AUTHORITY,
- ALL EXISTING DAMS WHICH HAVE A HIGH OR SIGNIFICANT HAZARD POTENTIAL SHOULD BE INSPECTED OVER A REASONABLE TIME AS A FIRST STEP IN IMPLEMENTING THE NATIONAL PROGRAM,

--FEDERAL AGENCIES WITH TECHNICAL EXPERTISE SHOULD FURNISH GUIDANCE TO THE STATES UPON REQUEST AND FEDERAL AGENCIES SHOULD PURSUE SAFETY PROGRAMS OF THEIR OWN, AND

--THE CORPS SHOULD BE PROVIDED AUTHORITY AND FUNDS TO MAINTAIN THE NATIONAL DAM INVENTORY.

IN ADDITION, THE CORPS' PROPOSED LEGISLATION FOR A NATIONAL DAM SAFETY PROGRAM RECOMMENDS MANDATORY PARTICIPATION FOR FEDERAL AGENCIES WITH DAM REGULATION RESPONSIBILITIES, AND DIRECTS ALL FEDERAL AGENCIES WITH INADEQUATE SAFETY PROGRAMS TO IMPROVE THEIR PROGRAMS.

IN ITS REPORT THE CORPS STATED THAT RESPONSIBILITY FOR DAM SAFETY SHOULD REST WITH THE DAM OWNERS, BUT THAT GOVERNMENTAL REGULATION IS NEEDED TO ASSURE THE OWNERS' OBLIGATIONS ARE PROPERLY CARRIED OUT. SIMILAR REGULATIONS HAVE ALREADY BEEN ESTABLISHED FOR BUILDING CODES, ELEVATOR INSPECTIONS, BRIDGE INSPECTIONS, AND OTHER AREAS WHERE GOVERNMENTAL REGULATION HAS BEEN NECESSARY TO PROTECT THE PUBLIC.

THE CORPS' REPORT CONCLUDED THAT MANY STATES HAVE INADEQUATE OR NON-EXISTENT DAM SAFETY PROGRAMS DUE PRIMARILY TO LACK OF FUNDS AND STAFF TO PERFORM INSPECTIONS. ALTHOUGH THE CORPS RECOGNIZED THE STATES' LIMITATIONS, THE CORPS' PROPOSED DAM INSPECTION PROGRAM WOULD NOT BE MANDATORY FOR STATES AND CORPS OFFICIALS TOLD US THAT THERE ARE NO ASSURANCES THE STATES WOULD CARRY OUT A DAM SAFETY PROGRAM UNLESS THEY RECEIVE FUNDING.

WE ARE NOT TOO HOPEFUL THAT THE CORPS' RECOMMENDATIONS WILL RESULT IN ANY IMMEDIATE OR SUBSTANTIAL CHANGES TO EXISTING STATE PROGRAMS, PRINCIPALLY BECAUSE STATE PARTICIPATION IS LEFT ON A VOLUNTARY BASIS.

THE CORPS RECOMMENDATIONS WOULD REQUIRE THE STATES TO VOLUNTARILY MAKE IMPORTANT AND IN SOME CASES EXPENSIVE IMPROVEMENTS TO THEIR PROGRAMS. SINCE THERE COULD BE A PROBLEM IN ASKING THE STATES TO VOLUNTARILY CARRY OUT A DAM SAFETY PROGRAM FOR WHICH THEY MAY NOT HAVE SUFFICIENT RESOURCES, IT APPEARS TO US THAT SOME PROPOSAL FOR FINANCIAL OR OTHER INCENTIVES WOULD BE NECESSARY.

#### ESTIMATED COST OF INSPECTIONS

THE CORPS HAS PROPOSED THAT AS A FIRST STEP INSPECTIONS SHOULD BE PERFORMED ON THOSE DAMS CLASSIFIED AS HIGH OR SIGNIFICANT HAZARD. THE CORPS STATED IN ITS REPORT THAT, OF THE 49,000 DAMS INVENTORIED, APPROXIMATELY 20,000 COULD BE SIGNIFICANTLY OR HIGHLY HAZARDOUS TO POPULATIONS DOWNSTREAM. SINCE THE ACCURACY OF THE INVENTORY DATA IS QUESTIONABLE, NEITHER WE NOR THE CORPS CAN ACCURATELY DETERMINE THE NUMBER OF HIGH OR SIGNIFICANT HAZARD DAMS. HOWEVER, OUR ANALYSIS OF THE CORPS' INVENTORY DATA INDICATED THAT THERE ARE APPROXIMATELY 16,600 HIGH AND SIGNIFICANT HAZARD DAMS.

THE CORPS REPORTED AN ESTIMATED COST OF ITS PROPOSED PROGRAM TO BE ABOUT \$73.5 MILLION PER YEAR (\$8 MILLION FEDERAL; \$65.5 MILLION STATE) FOR INSPECTION AND REGULATION EXPENSES, INCLUDING SUCH THINGS AS INITIAL INSPECTIONS, PERIODIC INSPECTIONS, AND REVIEW AND APPROVAL OF PLANS. ACCORDING TO THE CORPS, THIS \$73.5 MILLION IS APPROXIMATELY SEVEN TIMES THE ANNUAL AMOUNT CURRENTLY SPENT FOR DAM SAFETY ACROSS THE NATION AND REPRESENTS AN AVERAGE ANNUAL COST OF ABOUT \$1,500 PER DAM TO IMPLEMENT THE CORPS' PROPOSED INSPECTION GUIDELINES. HOWEVER, THREE STATES ESTIMATED THE AVERAGE ANNUAL COST TO IMPLEMENT THESE GUIDELINES TO BE LESS THAN \$500 PER DAM. ANOTHER STATE ESTIMATED THAT IT SPENT AN AVERAGE OF \$1,360 PER DAM FOR ITS PROGRAM.

THE CORPS REPORTED THAT OUT OF THE \$73.5 MILLION PER YEAR ESTIMATE, \$30 MILLION WOULD BE REQUIRED FOR INITIAL INSPECTION OF HIGH AND SIGNIFICANT HAZARD DAMS. OUR ANALYSIS OF THE CORPS' DATA INDICATED THE INITIAL INSPECTION COST FOR SUCH DAMS WOULD BE ABOUT \$20 MILLION PER YEAR. MANY STATES BELIEVE THE CORPS HAS OVERESTIMATED THE COST OF INITIAL INSPECTIONS. THREE STATES ESTIMATED INITIAL INSPECTION COSTS TO BE LESS THAN \$400 PER DAM COMPARED WITH THE CORPS' ESTIMATE OF \$7,500. ALSO, SOME DAMS INCLUDED IN THE CORPS' ESTIMATE MAY NOT NEED INITIAL INSPECTIONS BECAUSE OF ONGOING FEDERAL AND STATE INSPECTION PROGRAMS.

REGULATORY AND INSPECTION COSTS, HOWEVER, ARE BY NO MEANS ALL OF THE COSTS INVOLVED IN A DAM SAFETY PROGRAM. A SOUND PROGRAM WOULD ALSO HAVE SIZEABLE COSTS ASSOCIATED WITH REMEDIAL ACTIONS TO CORRECT DANGEROUS DAM STRUCTURES. CORPS OFFICIALS STATED THAT THESE COSTS CANNOT BE ESTIMATED UNTIL INSPECTIONS ARE PERFORMED.

ANOTHER IMPORTANT FACTOR WHICH MUST BE TAKEN INTO ACCOUNT IN CONSIDERING DAM INSPECTION COSTS IS THE COSTLY FEDERAL AND STATE ASSISTANCE WHICH ENSUES FOLLOWING DAM FAILURES.

#### ALTERNATIVE PROPOSALS

TO ASSIST THE CONGRESS IN DECIDING ON AN APPROPRIATE NATIONAL DAM SAFETY PROGRAM, IT WOULD HAVE BEEN HELPFUL IF THE CORPS HAD INCLUDED IN ITS REPORT OTHER APPROACHES OR MODIFICATIONS TO ITS APPROACH FOR CARRYING OUT SUCH A PROGRAM. BASED ON A NUMBER OF VIEWS WE RECEIVED, SOME OF THE ALTERNATIVES ARE: (1) ESTABLISHING A NATIONAL DAM SAFETY INSURANCE PROGRAM THAT WOULD REQUIRE IMPLEMENTATION OF SAFETY MEASURES SUCH AS PERFORMING INSPECTIONS AND CORRECTING DEFICIENCIES FOUND; AN INSURANCE PROGRAM MIGHT NECESSITATE SOME GOVERNMENT

UNDERWRITING SIMILAR TO THE EXISTING NATIONAL FLOOD INSURANCE PROGRAM, (2) ESTABLISHING UNIFORM MINIMUM INSPECTION GUIDELINES AND REQUIRING THEY BE IMPLEMENTED INSTEAD OF ALLOWING EACH STATE AND AGENCY TO ESTABLISH ITS OWN GUIDELINES; THIS PROGRAM MIGHT BE FINANCED FROM FEDERAL, STATE, OR INDIVIDUAL OWNER FUNDS OR A COMBINATION OF THESE, (3) ENCOURAGING FEDERAL AND STATE OFFICIALS TO COOPERATE ON A REGIONAL BASIS TO AVOID OR MINIMIZE DUPLICATION AND OVERLAP AND TO MAINTAIN A CONTINUING UNIFORM APPROACH TO THE DAM SAFETY PROGRAM; THIS PROGRAM MIGHT ALSO BE FINANCED FROM FEDERAL, STATE, OR INDIVIDUAL OWNER FUNDS OR A COMBINATION OF THESE, AND (4) REQUIRING THE STATES TO ADOPT AND IMPLEMENT AN ADEQUATE DAM SAFETY PROGRAM AS A PREREQUISITE TO FUTURE FUNDING OF FEDERAL DAM PROJECTS.

THERE ARE ALSO OTHER ALTERNATIVES TO THE CORPS' PROPOSAL THAT STATES PERFORM THEIR OWN INSPECTIONS, INCLUDING (1) HAVING A FEDERAL AGENCY PERFORM INITIAL INSPECTIONS WITH JOINT PARTICIPATION BY STATES WHERE POSSIBLE AS OPPOSED TO STATES BEING RESPONSIBLE FOR THE INSPECTION, (2) INITIALLY INSPECTING IN DETAIL ONLY THOSE DAMS WHICH ARE BELIEVED TO HAVE STRUCTURAL DEFICIENCIES, INSTEAD OF INSPECTING ALL HIGH OR SIGNIFICANT HAZARD DAMS, AND (3) SELECTING A PRIVATE AGENCY TO PERFORM INSPECTIONS IN PLACE OF FEDERAL OR STATE INSPECTIONS.

OTHER MATTERS WHICH NEED TO BE CONSIDERED IN ESTABLISHING A COMPREHENSIVE SAFETY PROGRAM BUT WHICH ARE NOT INCLUDED IN THE CORPS' RECOMMENDATIONS INCLUDE EDUCATING THE PUBLIC ABOUT DAM SAFETY, AND ENCOURAGING STATE AND LOCAL GOVERNMENTS TO (1) ADOPT ZONING LAWS TO PREVENT COMMUNITIES FROM BUILDING IN AREAS DOWNSTREAM FROM DAMS, AND (2) DEVISE WARNING SYSTEMS FOR EXISTING COMMUNITIES. THESE

AND OTHER PERTINENT MATTERS NEED TO BE CONSIDERED IN ANY OVERALL DAM SAFETY PROGRAM. IN THE ABSENCE OF SUCH CONSIDERATION, IT APPEARS TO US THAT THE CORPS WILL HAVE CONCEIVED A DAM INSPECTION PROGRAM RATHER THAN A DAM SAFETY PROGRAM.

WHILE MANY STATE AND FEDERAL DAM SAFETY OFFICIALS AGREE THERE IS NEED FOR DAM SAFETY PROGRAMS, SOME QUESTION THE NEED FOR A "NATIONAL" PROGRAM. SOME HAVE SAID THAT THE STATES SHOULD BE ABLE TO DETERMINE THE NEED FOR OR EXTENT OF THEIR OWN PROGRAMS. OTHERS INDICATED TO US THAT THE CORPS IS NOT RECOMMENDING A "NATIONAL" PROGRAM AND IS THEREFORE QUESTIONING THE NEED FOR SUCH A PROGRAM.

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IN CONCLUSION, MR. CHAIRMAN, I WOULD SAY THAT OUR OBSERVATIONS TO DATE INDICATE THAT PROGRESS IN ACHIEVING THE IMPORTANT OBJECTIVES OF THE 1972 ACT HAS BEEN SLOW AND UNCERTAIN, AND THE RESPECTIVE ROLES AND RESPONSIBILITIES OF THE FEDERAL AND STATE GOVERNMENTS FOR IMPLEMENTING A DAM SAFETY PROGRAM ARE LARGELY UNSETTLED.

WE WOULD BE HAPPY AT THIS POINT, MR. CHAIRMAN, TO RESPOND TO ANY QUESTIONS YOU OR OTHER MEMBERS OF THE SUBCOMMITTEE MAY HAVE.