



United States
Department of
Agriculture

Forest
Service

Washington Office

14th & Independence SW
P.O. Box 96090
Washington, DC 20090-6090

File Code: 1570-1
Route To: (1950)

Date: MAY 27 2003

Subject: Emergency Exemption from Stay Request on the Bitterroot National Forest

To: Regional Forester, R-1

I have received your request for a determination that an emergency exists and that therefore limited motorized access and use of motorized equipment should proceed immediately upon publication of a notice of a decision for the *Canyon Lake Dam and Wyant Lake Dam Project* in the Selway-Bitterroot Wilderness.

I have reviewed your request and the Bitterroot National Forest's associated documentation. Based on my review, I approve your request pursuant to 36 CFR 215.10(d). Enclosed is a consolidated summary of findings.

This emergency determination allows you to provide immediate authorization, after complying with the timeframes and publication requirements described in 40 CFR 1506.10(b)(2), for motorized use and access at Canyon Lake Dam in the Selway-Bitterroot Wilderness. The activities exempt from a stay of implementation during the appeal filing and formal disposition periods (approximately 105 days) are only those associated with limited motorized access and use of motorized equipment in conjunction with constructing an engineered partial breach of the Canyon Lake Dam.

As presented in the documentation provided by the Forest, Canyon Lake Dam is clearly a high hazard which could fail and result in the loss of life and private property as well as downstream damage to water quality, fish and riparian habitats, and other National Forest and wilderness values. Authorizing limited motorized access and the use of motorized equipment within the Selway-Bitterroot Wilderness, for the purpose of constructing a partial breach of Canyon Lake Dam, will provide the opportunity to respond to this emergency situation. Without timely authorization, it would not be possible to complete the hazard mitigation work in 2003, thereby subjecting the sub-standard facility to another cycle of snow melt and possible catastrophic failure.

The Forest has provided compelling evidence that Canyon Lake Dam is a high hazard which requires urgent attention due to its deteriorated condition. It is therefore reasonable to authorize motorized access and use of motorized equipment to effect repairs as soon as possible. Key points documenting and supporting this determination include, but are not limited to, the following:

- Canyon Lake Dam was formally classified as a "high hazard dam" by the State of Montana, Department of Natural Resources and Conservation in 1996. Based on a breach analysis conducted by the State, there is a risk of loss of life if the dam fails.



Regional Forester, R-1

2

- The DEIS states that a failure of the Canyon Lake Dam would also result in serious environmental consequences.
- The Canyon Creek Irrigation District (CCID) has existing rights and obligations to maintain Canyon and Wyant Dams consistent with federal dam safety standards and other pertinent laws and regulations which also govern CCID's use of their easements and the protection of National Forest System lands.
- CCID has requested access to their Canyon Lake and Wyant Lake facilities so they may perform work necessary to meet the requirements of federal dam safety standards.
- Both Canyon Lake Dam and Wyant Lake Dam have structural and design deficiencies that the CCID must correct to comply with the requirements of dam safety laws and regulations. The nature of known deficiencies, the downstream risks, and uncertainties associated with the internal structure and integrity of these older dams increase the urgency that known deficiencies be corrected as soon as possible.
- The deteriorated condition of Canyon Dam is the driving force behind the work proposed by Canyon Creek Irrigation District.
- The project files contain a variety of safety inspections and geotechnical investigations which document the serious deficiencies at the dams.
- The Northern Region Engineer stated that "because of recent problems with the dam and the recommendations in the Hydrometrics subsurface investigation report, it is imperative that work be performed during the 2003 field season that will either correct the outlet pipe, spillway and stability deficiencies or that will lower the hazard rating of the dam to moderate hazard."
- CCID has proposed to construct an engineered partial breach in Canyon Lake Dam in 2003. This would "lower" the dam's hazard rating, and be followed by a full repair of the facility in the following year.
- It is important that any corrective measures be completed in one operating season if possible. An increased risk of failure, as well as damage to natural resources would result if repairs were left to over winter in an "open" and unfinished state.
- It would not be possible to provide CCID with timely authorization for limited motorized access and the use of motorized equipment, as necessary to complete the partial breach, without a Chief's emergency determination.
- The work is planned utilizing the "minimum tool" concept to help protect wilderness character and resources.

I commend your efforts to work cooperatively with CCID and interested publics in the resolution of this hazard.

for Dale N. Bosworth
DALE N. BOSWORTH
Chief

Enclosure

cc: Dave T Bull

CONSOLIDATED SUMMARY OF WO REVIEW TEAM’S FINDINGS
on the
CANYON LAKE DAM and WYANT LAKE DAM PROJECT
REQUEST for EMERGENCY SITUATION DETERMINATION

A team of Washington Office Staff (Ecosystem Management Coordination; Recreation, Heritage & Wilderness Resources; Engineering (R-9); and Office of General Council [WO Review Team]) reviewed the Canyon Lake Dam request for exemption from a stay of implementation during the appeal period in order to make a recommendation to the Chief. The WO Review Team considered both the Regional Forester’s letter of support and the Forest’s associated documentation in their review. Based on our review, as summarized below, we recommend that the Chief grant the requested exemption from stay.

A. REGULATORY FRAMEWORK

36 CFR 215.10(d) *

“A project decision is not subject to a stay if the Chief of the Forest Service determines that an emergency situation exists with respect to the decision in accordance with the following provisions of this paragraph:

- (1) An emergency, as defined here, is an unexpected event,
or a serious occurrence
or a situation requiring urgent action.

Examples of an emergency include, but are not limited to, the following:

- (i) Vegetation loss which presents an immediate threat of flooding or landslide.
- (ii) Hazardous or unsafe situations as a result of wildfire or other circumstances.
- (iii) Damage to water quality caused by siltation due to fire or flooding.
- (iv) Potential loss of fish and wildlife habitat due to windstorms and blowdowns.
- (v) Sudden outbreaks of forest pests and diseases.”

* Emphasis added

B. NATURE OF THE SITUATION

The *Canyon Lake Dam and Wyant Lake Dam Project* Draft Environmental Impact Statement (DEIS) proposes to authorize Canyon Creek Irrigation District (CCID) access to their easements at Canyon Lake Dam and Wyant Lake Dam, with certain terms and conditions, so that CCID may make these facilities safe and consistent with their responsibilities under federal dam safety laws and regulations, and consistent with their rights and responsibilities under terms of their easements. Both easements are entirely within the National Forest boundary as well as within the Selway Bitterroot Wilderness.

CCID has requested access to their Canyon Lake and Wyant Lake facilities so they may perform work necessary to meet the requirements of federal dam safety standards. The DEIS states:

“Both Canyon Lake Dam and Wyant Lake Dam are classified as high hazard dams. This classification is based on the potential consequences if the structure(s) fails, based on risks to downstream life and property. Failure of either structure would “likely result in loss of human life or excessive economic loss”, FSM 7511.2. Because of the progressive deterioration of both dams, there is a sense of urgency to complete the work in an efficient manner as soon as possible to ensure protection of wilderness resources and public safety.”

The deteriorated condition of Canyon Lake Dam is the driving force behind the work proposed by CCID.

The DEIS states that all work on the dams is proposed to be completed in 2003, but CCID has since modified the timing of their proposal, and the phasing of the work. CCID has indicated that their activities during this period (2003) would be to construct an engineered partial breach in Canyon Lake Dam. This would “lower” the dam’s hazard rating, and be followed by a full repair of the facility in the following year. The partial breach of the Canyon Lake Dam would help mitigate the danger from an upstream failure of Wyant Lake Dam. The request for Chief’s emergency determination would only apply to the portion of the authorization and conditioning of work CCID proposes to complete this field season (primarily mid-July to September), which would address the urgent high risk situation at Canyon Lake Dam. This would involve motorized access and use in constructing the engineered breach on the Canyon Lake Dam. A short work season at the Canyon Lake Dam requires that work begin in mid-July to insure it is completed this year. Without the emergency stay, resolution of an appeal of the ROD would move the work start date into September, thereby foregoing the opportunity to resolve the hazard this year.

Terri Anderson, Bitterroot NF Civil Engineer, in an April 7, 2003, letter to the Forest Supervisor discussing the timeframe needed to complete the work, notes that: “[b]ecause of dam safety issues, the embankment cannot be left in an open, or exposed condition through the winter. The work must be completed within the limited field season at the dam site.”

The FEIS will be completed on May 30, 2003. Should an appeal occur, the automatic stay under 36 CFR 215.10(b) would severely restrict the available operating season prior to entering a new winter/spring season when the dams are at the highest risk of failure.

C. REASONS FOR URGENT ACTION

The “purpose and need” for the project come from CCID’s rights and obligations to maintain their dams in a manner consistent with federal dam safety standards and other pertinent laws and regulations which also govern CCID’s use of their easements and the protection of National Forest System lands.

CCID has requested access to their Canyon Lake and Wyant Lake facilities so they may perform work necessary to meet the requirements of federal dam safety standards. Both Canyon and Wyant Dams have structural and design deficiencies that the CCID must correct to comply with the requirements of dam safety laws and regulations. The nature of known deficiencies, the downstream risks, and uncertainties associated with the internal structure and integrity of these older dams increase the urgency that known deficiencies be corrected as soon as possible.

The regulations at 36 CFR 215.10(d) include “hazardous or unsafe situations” as an example of an emergency situation requiring urgent action. Canyon Lake Dam was formally classified as a “high hazard dam” by the State of Montana, Department of Natural Resources and Conservation in 1996. Based on a breach analysis conducted by the State, there is a risk of loss of life if the dam fails. The results of the breach analysis indicates that the West Side Road would be overtopped, potentially causing damage to the houses and residents immediately downstream of the road crossing, and endangering drivers and passengers attempting to cross the road during flood conditions.

The project files contain a variety of safety inspections and geotechnical investigations which document the deficiencies at the dams. These inspections were conducted following an emergency dam crest repair in 1996, and include recent exploratory drilling in 2002. These studies were conducted by the Forest Service, U.S. Bureau of Reclamation, and two private engineering firms. Three primary deficiencies were noted in a May 2000 feasibility study by DJ Engineering titled “Rehabilitation Feasibility Study for Canyon Lake Dam.” These included: (1) an inadequate spillway capacity, (2) an uneven dam crest, and (3) a partially collapsed outlet works. A recent geotechnical investigation of Canyon Lake Dam entitled “Canyon Lake Dam Improvements Project Geotechnical Investigation” by Hydrometrics, Inc. (Oct. 2002), resulted in additional deficiencies associated with the long-term stability of Canyon Dam during extreme events, such as a severe flood or earthquake. These two deficiencies are: (1) unsuitable embankment material subject to internal erosion or liquefaction during full reservoir levels, and (2) long-term instability of the Dam resulting from the existing embankment geometry, which is a narrow, steep cross section.

Evidence of inadequate freeboard and inadequate spillway capacity has been documented in inspection reports beginning in 1956. Events which occurred at Canyon Lake Dam concurrent with the studies listed above include:

1996 Canyon Lake Dam overtopped and washed out a center section of the dam in spring.

In 1996 heavy runoff conditions (160% of normal snowpack) lead to an overtopping event and crest erosion to Canyon Lake Dam. According to the engineering report that was prepared by David Jones, P.E., “Erosion Damage Report” dated August 1996, the crest erosion was caused by an inadequate spillway size and inadequate dam freeboard. Emergency repairs were completed September and October 1996. These emergency repairs were made specifically for the purpose of repairing the 40-foot wide breach caused by runoff overtopping

the dam - not to bring the dam up to federal safety standards. This overtopping event provides evidence of the inadequacy of both the existing spillway capacity and the available freeboard.

- 1998 Collapsed roof rock discovered in outlet conduit during October 1998 (reservoir at low water level) and July 1999 (high water level) inspections by David Jones, P.E.
- 2001 Emergency repairs completed in October for the purpose of repairing a large sink hole and associated piping of the embankment, discovered earlier in the year.

The urgency and need for action to resolve the hazardous and unsafe condition at Canyon Lake Dam was further highlighted in a January 2, 2003 letter from Thomas Pettigrew, Northern Region Director of Engineering. He states that “[b]ecause of the recent problems with the dam and the recommendations in the Hydrometrics subsurface investigation report [2002], it is imperative that work be performed during the 2003 field season that will either correct the outlet pipe, spillway and stability deficiencies or that will lower the hazard rating of the dam to moderate hazard.”

The DEIS states that a failure of the Canyon Lake Dam would also result in serious environmental consequences. Wilderness resource effects “...would be severe soil movement, drainage scouring and vegetation damage that would be an irreversible consequence of human activity.” Water resource effects could be “...a possible flash flood, large sediment release from the reservoir, and extensive scouring throughout the canyon. Streamside riparian areas could be severely damaged or eroded away completely.” The effects to fisheries are listed as “[t]his would kill fish and other aquatic animals, and severely degrade aquatic habitat in Canyon Creek. Recovery time for the habitat and aquatic biota would be more than a decade.”

D. ALTERNATIVES CONSIDERED

The Forest developed three alternatives that were reasonable and responsive to key issues. These alternatives represent different ways to satisfy the project’s “purpose and need” and included the no action alternative, as well as two alternatives which authorized differing levels of helicopter vs. foot/stock access for the work to be done at Canyon and Wyant Lake Dams. These alternatives were responsive to CCID’s request for access and the four options they developed to redeem their responsibility for dam safety laws and regulations. These four options included repairing critical deficiencies; major rehabilitation; breaching Canyon Lake Dam; and a partial breach of Canyon Lake Dam in 2003 (Phase I), followed by major rehabilitation of the Canyon Lake Dam in 2004 (Phase II). The last option listed, option D, was developed by CCID during a February 13, 2003 meeting. Since this option was developed after the January 6, 2003 release of the project DEIS, the FEIS is being modified to include this recent two phase option and the resulting environmental effects. The FEIS is expected to be completed on May 30.

In protecting wilderness character, resources, and in managing wilderness use in accordance with the Wilderness Act, the Forest is adhering to the "minimum tool" concept. The proposal is to complete the partial breach of Canyon Lake Dam with the minimal tools necessary, and seven person work crews from the Montana Conservation Corps, as soon as the snow melts at this high elevation (approximately 7,500 feet), which would occur in mid to late July. This work, using manual labor and gasoline-powered rock drills, is expected to continue in shifts through the first week of September. If necessary, other small, mechanized tools may also be utilized. However, the engineering representative for the Canyon Creek Irrigation District recommends that a backup, or contingency plan, is included in case difficulties are encountered with the ability to complete the breach within the limited season. This final backup plan is strictly for a situation that requires urgency to complete the required work, and will only be utilized if the above non-mechanized means are not adequate. This final backup plan utilizes traditional excavation equipment for the primary purpose of expediency to complete the work, and would require additional helicopter use.

E. RECOMMENDATION

Based on our review, we recommend that the Chief grant the requested exemption from stay. The information provided by the Forest and Region clearly indicates that Canyon Lake Dam is a hazard that requires urgent action. We believe that implementation of the action proposed by the Forest will help resolve this situation. Without this action, failure of the dam could result in loss of life and/or in serious environmental damage. The work was planned utilizing the "minimum tool" concept to help protect wilderness character and resources.