

SEISMIC EXPERIMENT at the TETON DAM SITE

FREMONT COUNTY, IDAHO

FINDING OF NO SIGNIFICANT IMPACT

1. Background. The Defense Threat Reduction Agency (DTRA) proposes to conduct seismic testing at the former Teton Dam site located in Fremont County, Idaho. The purpose of this experiment is to provide seismic information in support of treaty verification applications. A review of existing information identified a gap in data and mathematical models for seismic wave transmission through low porosity volcanic tuff, like that at the Teton dam site. The information obtained from this experiment will be used to update existing mathematical models to enhance U.S. treaty monitoring capability.

2. Proposed Action. DTRA is proposing to conduct a seismic and acoustic experiment at the former location of the Teton Dam. DTRA is interested in using the site due to the quality of the rock at the site as well as the extensive characterization data that has been collected during the design and construction of the dam, as well as its subsequent failure. The project would require the following:

- Twenty-seven 4.8 inch diameter instrumentations holes would be placed along 3 radials extending outwards from a 20-inch diameter charge hole. The depth of each instrumentation hole would be adjusted for local topographic variation in order to achieve the uniform depth. Twenty-four holes will be approximately 80 to 100 ft deep (25-30 m) and three will be approximately 165 ft (50 m) deep. Instrumentation (accelerometer canisters) will be set near the bottom of each hole and grouted in place.
- The charge hole would contain a 225 lb. explosive charge and will be 80 to 100 ft (25 to 30 m) in depth.
- An additional 12 boreholes would be placed along the radials. These additional boreholes include two, 4.8 inch diameter instrumentation slant holes at 131.2 ft (40 m) in depth and ten, 3-inch diameter boreholes at approximately 80 to 100 ft (25 - 30 m) in depth.
- Up to 14 seismometers would be placed up to 1640 ft (500 m) away. The seismometers will be placed on rock and sandbags piled on top. If there is no rock on the surface, the seismometer will be buried in a hole 1-ft by 1-ft by up to 1-ft deep.

Cables will be run from the monitoring equipment exiting the boreholes to an instrumentation trailer. A cable will also run from the explosive charge exiting the borehole collar to an appropriate firing system. Cameras will be mounted in various locations on both sides of the canyon to allow visual monitoring during the seismic experiment. An appropriately designated exclusion area, including areas on both sides of the Teton River Canyon and the river itself, will be evacuated during the handling of explosives and prior to execution of the experiment. The experiment is expected to be conducted in the summer or early fall of 2014.

3. Summary of Impacts. A draft Environmental Assessment (EA) has been prepared pursuant to the National Environmental Policy Act (NEPA) for the proposed work. This document describes the potential environmental consequences of the seismic experiment to be conducted at the former site of the Teton Dam which is briefly summarized below:

The site preparation and conduct of the single seismic experiment will not result in any significant adverse impact to the environment. There will be a slight temporary disturbance in habitat for flora and fauna as a result of the site preparation activities; however, the amount lost will be insignificant when compared with the surrounding ecosystem. Once the experiment is completed, the site will be reseeded with a native seed mix appropriate to the area which will minimize effects from the experiment. No humans or large animals will be injured by the airblast, ground shock, or fragmentation from the detonation. No existing structures will be damaged by the detonation. The proposed action will have no effect on the threatened grizzly bear, Canada lynx, Ute ladies'-tresses orchid, or the proposed threatened wolverine. The project is expected to have no effect on the designated critical habitat for grizzly bear and Canada lynx. Due to the lack of presence in the action area, the proposed project is expected to have no effect on the candidate species of yellow-billed cuckoo, sage-grouse, or whitebark pine.

The proposed project will not have direct or indirect effects to waters of the U.S.; therefore, permits under the Clean Water Act Section 401 or 404 are not required.

The operation of drilling equipment during construction activities will result in increased vehicle emissions, and vehicular access to/from the project site on local dirt roads will result in a slight increase in fugitive dust. These effects will be localized and temporary. Emissions will not exceed EPA's *de minimis* threshold levels or affect implementation of Idaho's Clean Air Act implementation plan; therefore, effects to air quality will be insignificant.

DTRA has coordinated its review under NEPA with agency responsibilities under Section 106 of the National Historic Preservation Act. Only one cultural resource was identified near the area of potential effect, the Teton Dam. The U.S. Bureau of Reclamation considers the Teton Dam site to be eligible for inclusion in the National Register of Historic Places (NRHP) and manages it as an eligible property, but there has been no formal determination at this time. The undertaking would not alter or otherwise affect directly or indirectly any significant characteristics or values that would qualify Teton Dam for listing on the NRHP. DTRA has notified the Idaho State Historic Preservation Office (SHPO) and Indian tribes about the project, provided an overview and summarized the agency's efforts to identify and evaluate historic properties within the Area of Potential Effect. DTRA has consulted with the SHPO and submitted the agency's finding that there would be no historic properties affected by the proposed undertaking. In a letter dated November 7, 2013, the Idaho SHPO concurred with these findings.

The experiment is a one-time event and no long term socioeconomic benefits are expected. To protect human safety, standard construction best management practices will be required during the construction and site clean-up phases.

4. Coordination. The proposed action has been coordinated with appropriate Federal, state, and local agencies. The draft EA was made available for a 30-day public review and comment on February 4, 2014, via email to local libraries and posting on the public DTRA website.

5. Finding. Based on the analysis described above and provided in more detail in the EA, this project is not a major federal action significantly affecting the quality of the human or natural environment, and therefore does not require preparation of an environmental impact statement.

7 May 2014
Date


Kenneth A. Myers
Director