



# DAM SAFETY UPDATE

## LUCKY PEAK DAM and LAKE

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG.

### What residents near dams should know

Living with flood risk-reduction infrastructure such as dams and levees comes with risk. Know your risk. Dams do not eliminate all flood risk, so it is important that residents downstream from the dam are aware of the potential consequences should the dam breach, not perform as intended, or experience major spillway or outlet works flows.

Living with dams is a shared responsibility of residents, local emergency management, and the Corps (USACE). Know your role. Listen to and follow instructions from local emergency management officials. Contact your local officials to learn about flood risk management decisions in your area. Consider purchasing flood insurance.

For additional information, see:

[http://www.damsafety.org/media/Documents/DownloadableDocuments/LivingWithDams\\_ASDSO2012.pdf](http://www.damsafety.org/media/Documents/DownloadableDocuments/LivingWithDams_ASDSO2012.pdf).

<http://www.usace.army.mil/Missions/CivilWorks/DamSafetyProgram.aspx>.

<http://www.nww.usace.army.mil/Missions/DamSafety.aspx>.



### Project Description

Lucky Peak Dam is a rolled earthfill embankment dam located on the Boise River, about 10 miles upstream from Boise, Idaho. Lucky Peak Lake has 45 miles of shoreline with a drainage area of 2,650 square miles. Lucky Peak provides flood risk reduction, hydroelectric power generation, irrigation water, and recreation. Construction of Lucky Peak began in October 1949 and the project was placed in operation in June 1955. The dam is 2,340 feet long with a maximum height of 340 feet. The project includes two gate-controlled outlet tunnels and a privately owned and operated power plant.

### Risks Associated with Dams in General

Dams reduce but do not eliminate the risk of economic and environmental damages and loss of life from flood events. When a flood exceeds a reservoir's storage capacity, large amounts of water may have to be released that could cause damaging flooding downstream. A fully-functioning dam could be overtopped when a rare, large flood occurs, or a dam could breach because of a deficiency, both of which pose risk of property damage and loss of life. This means there will always be flood risk that has to be managed. To manage these risks, USACE has a routine program that inspects and monitors its dams regularly. USACE implements short- and long-term actions such as interim risk reduction measures (IRRM), on a prioritized basis, when unacceptable risks are found at any of its dams. The status of Lucky Peak Dam IRRM is provided below.

### Risk Associated with Lucky Peak Dam

Based upon the most recent risk assessment of Lucky Peak Dam in 2010, USACE considers this dam to be a moderate to high risk dam, among its more than 700 dams. The risks are primarily driven by an unconfirmed potential for foundation internal erosion and the potential for foundation instability during a large seismic event. The potential for loss of life is highest within a couple of miles of the dam with the loss of life concerns decreasing substantially downstream of the dam. Advanced warning of problems and events plays a major role in protecting life and property.

## Status of Interim Risk Reduction Measures

### **Completed/Resolved Interim Risk Reduction Measures** (as of January 2017)

- Conduct a potential failure mode analysis: Completed.
- Dam safety instrumentation evaluation: Analysis of existing instrumentation was completed in FY2011 and recommended two additional piezometers. These instruments were installed in November 2011.
- Update the dam safety emergency action plan: Revision completed September 2012.
- Update emergency action plan inundation maps: Update completed September 2012.

### **Ongoing/Remaining Interim Risk Reduction Measures** (as of January 2017)

- Updating the dam surveillance and monitoring plan to address updated potential failure modes and emergency-related event monitoring: planned for FY2017.
- Conduct emergency exercises: A tabletop type emergency exercise with local officials and outside agencies was conducted in September 2011. This is a recurring measure, and the next exercise is planned for late FY2017.