



DAM SAFETY UPDATE MCNARY LOCK AND DAM

U.S. ARMY CORPS OF ENGINEERS

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What residents near dams should know

Living with dams and along rivers comes with risk. Know your risk. One of USACE's primary missions is to ensure that the inland navigation traffic can move safely, reliably, and efficiently and with minimal impact on the environment.

Living with locks and dams is a shared responsibility of residents, local emergency management, and the Corps. Know your role. Listen to and follow instructions from local emergency management officials. The Corps doesn't normally issue evacuation instructions. 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.usace.army.mil/Missions/CivilWorks/DamSafetyProgram.aspx>.

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



Project Description

McNary Lock and Dam is a run-of-river dam that maintains a navigable pool for river traffic but does not store flood waters. It is located in Oregon and Washington at river mile 292 on the Columbia River. McNary is a multipurpose project providing navigation, hydroelectric power generation, recreation, wildlife habitat and incidental irrigation. The project consists of a spillway, powerhouse, navigation lock, two earth fill embankments, and fish passage facilities. The McNary powerhouse has a total capacity of 980 megawatts. The Corps designed and supervised construction, which began in 1947. The project was dedicated in 1954. All power units were in operation by February 1957.

McNary Dam is 7,365 feet long and approximately 183 feet above the streambed. This includes a 1,620-foot-long earth fill embankment between the Washington shore and the navigation lock and a 2,465-foot-long earth fill embankment between the Oregon shore and the powerhouse. Lake Wallula behind the dam is 63 miles long with 242 miles of shoreline and a water surface area of 38,800 acres.

Public Safety is the Corps' Highest Priority

The U.S. Army Corps of Engineers' highest priority is public safety. While we cannot completely eliminate risk, we can reduce risk. The objective of the Corps' Dam Safety Program is to maintain public safety, make Corps dams safer and minimize risks. Since 2007, the Corps has used a risk-informed process to prioritize addressing dam safety deficiencies on a nationwide basis. Walla Walla District dams and appurtenant (dam-related) levees were screened and assessed for dam safety issues and deficiencies and their potential risk to the public. This led to a better understanding of specific conditions at dams, which has led to safety improvements. After dams and dam-related levees were assessed, the Corps categorized dams into five Dam Safety Action Classifications (DSAC) based on individual dam safety risk:

- DSAC 1: Very High Urgency
- DSAC 2: High Urgency
- DSAC 3: Moderate Urgency
- DSAC 4: Low Urgency
- DSAC 5: Normal

The dam safety classifications assist the U.S. Congress and the Corps in prioritizing funding for dam safety infrastructure improvements.

McNary Lock and Dam Status

McNary Lock and Dam was screened and classified as DSAC 3 “Moderate Urgency” in September 2009 because of potential failure of the navigation lock embankment area due to overtopping during maximum flood event conditions.

The McNary Lock and Dam DSAC 3 means for confirmed and unconfirmed dam safety issues, the combination of life, economic or environmental consequences with likelihood of failure is moderate. The Corps considers this level of life-risk to be unacceptable. Currently there is no evidence to suggest an emergency situation exists or is about to occur.

Risks Associated with Dams in General

Every day, thousands of vessels move people, animals, and products across the country via the nation's inland rivers and harbors. This water traffic is a vital component of the nation's economy. However, the navigation infrastructure is aging. Over half of the locks and dams are over 50 years old, and the consequences of this aging infrastructure are increasing incidents of downtime, with disruption to river navigation, and a higher risk of major component failures. Both of which have significant economic risks. To manage these risks, the Corps routinely inspects and monitors its locks and dams. The Corps 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. McNary Lock and Dam IRRM include:

Completed Interim Risk Reduction Measures (as of February 2015)

- Repair navigation lock derrick cranes: Completed, derrick cranes are back in service.
- Perform spillway end sill undermining inspection: End sill diving inspection completed.
- Stockpile emergency sand and gravel: A purchase agreement has been established to obtain materials, supplies, and equipment from a local contractor in the event of an emergency.
- Update the dam safety emergency action plan: Revision completed September 2012.
- Complete navigation lock stoplog inspection and repairs: Downstream stoplogs have been inspected and repaired. Upstream stoplog repairs are complete.

Ongoing/Remaining Interim Risk Reduction Measures (as of February 2015)

- Develop and implement north side protection procedure: Engineering scope developed, awaiting funding to complete.
- Install additional powerhouse foundation instrumentation: on hold pending outcome of potential failure mode analysis.
- Develop the Oregon and Washington fish ladders closure plan.
- Perform potential failure mode analysis: Currently scheduled for FY2015.
- Develop dam surveillance plan for high water events.
- Conduct emergency exercises.

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