

Fish Passage Plan (FPP) Change Form

Change Form # & Title: 24AppA001 – Doble Test Schedule for 2024
Date Submitted: 27-DEC-2023
Project: Lower Snake Projects and DWR
Requester Name, Agency: Chris Peery, Corps
Final Action: **FINALIZED 1-FEB-2024**

FPP SECTION:

Appendix A, section 1.5

JUSTIFICATION FOR CHANGE:

Add the 2024 Doble test schedule for the lower Snake projects and Dworshak Dam.

PROPOSED CHANGE:

See following pages for edits to existing FPP text in track changes.

COMMENTS:

1-FEB-2024 FPOM FPP meeting:

Van Dyke asked if the ones in July could be moved into August. With all the changes in the spill operation this year, is anyone looking into that.

Peery replied it's a scheduling thing. There's one crew that does it and they go from project to project. So they can't do them all in August. The one in July is IHR which needs to get done before starting LGS. The work at LGS is the longest one and goes into August, but just takes T2 out so Units 1-4 will still be available.

RECORD OF FINAL ACTION: Finalized at the FPOM FPP meeting 1-FEB-2024.

PROPOSED CHANGE: *edits to existing FPP text in track changes*

1.5. Doble Testing¹

The current year’s transformer outage schedule for Doble testing at lower Snake projects and Dworshak Dam is in **Table A-1**.

1.5.1. Lower Snake River Projects:

At the Lower Snake projects, Doble testing of transformers is required at least every three years to ensure they are functioning correctly and to identify issues that need repair. The testing must be conducted during warm, dry conditions (July–August) and requires an outage of the transformer and associated units. Testing is performed during already scheduled outages to the extent possible and timed to avoid or minimize impacts to fish. *In years that Doble testing isn’t required, the project may still require an outage during the same timeframe to perform necessary transformer maintenance and repairs that were identified in previous Doble tests and inspections.* For more information, see project-specific **sections 6-9** below.

1.5.2. Dworshak Dam:

At Dworshak Dam, required transformer maintenance and Doble testing occurs every two out of three years starting September 21. For more information on Dworshak maintenance and testing, see **Appendix I**.

Table A-1. Doble Testing Schedule in 2024.^a

Project	Dates	Outage (Transformer & Units)	Notes ^b
IHR	July <u>15-19</u>	TW <u>5</u> & TW <u>6</u> (Units <u>5</u> , <u>6</u>) all hours	Remaining available units (2, <u>3</u> , <u>4</u>) operated per FPP priority order.
LMN	<u>N/A</u>		<u>No Doble Testing in 2024.</u>
LGS	<u>July 15 – August 11</u>	<u>T1 (Units 1–4) first / last day</u> <u>T2 (Units 5, 6) continuous</u>	<u>All units OOS 0500-1700 first and last day. Units 5 & 6 will remain OOS during the continuous T2 outage with Units 1 – 4 operating per FPP priority order.</u>
LWG	<u>12-16 August</u>	<u>T1 (Units 1-4) All hours</u> <u>T2 (Units 5, 6) OOS daytime, RTS nightly</u>	<u>All units OOS 0600-1800. Unit 5 @ ~8 kcfs for station service. Units 5 & 6 will RTS nightly.</u>
DWR	<u>N/A</u>		<u>No Doble testing in 2024</u>

a. The lower Columbia projects (BON, TDA, JDA, MCN) perform Doble testing concurrent with outages for maintenance and do not have specific outages for Doble tests.

b. OOS = Out of Service (unavailable to operate); RTS = Return to Service (available to operate).

¹ “Doble test” is a common term referring to a power factor test of transformers to measure performance of electrical insulation. Doble is the name of a manufacturer of the test equipment.

6. ICE HARBOR DAM

6.1.3. Doble Testing (see section 1.5 above for more information)

- a) Dates: July 15-19.
 - b) Description: The outage in 2024 is required to perform Doble testing of TW5 and TW6, which will take Units 5 and 6 out of service continuously during testing. Remaining available units (2, 3, 4) will be operated per FPP priority order.
 - c) Impacts to FPP Criteria: None. Since Ice Harbor has multiple transformer banks and transmission lines and redundant switching capability, remaining available units will be available and operated pursuant to FPP priority order.
-

7. LOWER MONUMENTAL DAM

7.1.3. Doble Testing (see section 1.5 above for more information)

- a) Dates: N/A (no outage in 2024)
 - b) Description: N/A
 - c) Impacts to FPP Criteria: N/A
-

8. LITTLE GOOSE DAM

8.1.1. Doble Testing & T2 Transformer Monitoring Equipment Upgrades (see section 1.5 above for more information)

- a) Dates: July 15–August 11.
 - a)b) Description: The 2024 outage is required to perform Doble testing and T2 monitor equipment installation. T1 will be Doble-tested and Units 1-4 will be out of service July 15 (first day) and August 11 (last day) from 0500 - 1700. During all other hours, Units 1–4 will be operated per FPP priority order. T2 (Units 5, 6) will be Doble tested and out of service continuously for transformer monitoring equipment installation due to elevated maintenance needs of aging equipment. More monitoring is required to avoid catastrophic failures to avoid excessive loss of life and equipment. Installation of a total transformer monitoring system will include new sensors for winding and oil temperatures, high-capacity pressure relief devices, LTC monitoring, and real-time busing monitoring.
 - b)c) Impacts to FPP Criteria: Daily from 0500-1700 on July 15 and August 11, all units will be out of service and all project outflow spilled.
-

9. LOWER GRANITE DAM

9.1.1. Doble Testing (see section 1.5 above for more information)

- a) Dates: August 12-16
-

b) Description: The outage in 2024 is required to perform Doble testing and routine maintenance on T1. Some of the work needs to be done from the top of the transformer on T1, which will require the powerhouse line (all units) to be out of service daily from August 12 at 0600 through August 16 at 1800. T1 (Units 1-4) will remain OOS continuously through the entire outage period, however T2 (Units 5 and 6) will RTS nightly, Unit 5 will be operated for station service power (approximately 8 kcfs) while the PH line is OOS (daily, Aug 12-16).

c) Impacts to FPP Criteria: All units will be out of service for up to 12 hours/day (0600-1800) daily from August 12 through August 16. During these hours, all project outflow will be spilled except approximately 8 kcfs through Unit 5 for station service power.
