

MIO DAM

Plant Commissioned: 1917

FERC License Expiration: 6/30/2034

Power Generated: 5 MW

Upwelling System Installed: 2009, operates into September

River Management: Cold water fishery

Mio Impoundment Shoreline Ownership: 12 miles owned by Consumers Energy, 10 miles owned by National Forest System

1994 FERC License Orders: Focused on: **a.)** water quality (warming of the river below the project) and **b.)** recreation

CWA 401 Water Quality Certification

License Article 405 Standard for June July August = **20C** September = **17C**

License Article 405 (Croton, Hodenpyl, Tippy, Mio, Alcona, Foote Projects): Upon installation and operation of the dissolved oxygen (D.O.) and water temperature instruments required in Article 404 and in accordance with the provisions of that article, the Licensee shall maintain the following water quality limits at the Croton [Tippy, Hodenpyl, Mio, Alcona, Foote] Project when flows are greater than or equal to monthly 95 percent exceedance flows. Monthly average water temperature downstream of the project shall not exceed the following temperatures (°F):

J F M A M J J A S O N D

38 38 43 54 65 68 68 68 63 56 48 40

Exceeded Water Quality Standard:

July, 1992 - 2009

July, 2011-2021

August, 2002-2008, 2011-2012, 2017, 2019, 2020, 2021

September, 2001, 2005-6, 2017

July Mean (1998-2021) = 20.90

July Mean Pre-upwelling = 20.61

July Mean Post-upwelling = 21.10

- Mio Project - out of compliance 33% of the time during June - September
76 % of time during July - August

2022 Repairs Needed:

DAM SAFETY: Left Retaining Wall Replacement: \$3,650,000

FERC REQUIREMENT: Electrical Safety Project: \$2,450,000

DAM SAFETY: Downstream Reverse Filter: \$935,000

DAM SAFETY: Middle Embankment Erosion Protection Project: \$520,000

TOTAL EXPENDITURES FOR UPGRADES: \$6,620,000

DAM REMOVAL COST: \$10,000,000 (figure derived from Boardman River Dam Removal & Restoration)

ALCONA DAM

Plant Commissioned: 1924

FERC License Expiration: 6/30/2034

Power Generated: 8 MW

Upwelling System Installed: NONE

River Management: Cold water fishery

Alcona Impoundment Shoreline Ownership: 9 miles owned by Consumers Energy and 8 miles owned by National Forest System

1994 FERC License Orders: Focused on recreation

CWA 401 Water Quality Certification

License Article 405 Standard for June July August = **20C** September = **17C**

License Article 405 (Croton, Hadenpyl, Tippy, Mio, Alcona, Foote Projects): Upon installation and operation of the dissolved oxygen (D.O.) and water temperature instruments required in Article 404 and in accordance with the provisions of that article, the Licensee shall maintain the following water quality limits at the Croton [Tippy, Hadenpyl, Mio, Alcona, Foote] Project when flows are greater than or equal to monthly 95 percent exceedance flows. Monthly average water temperature downstream of the project shall not exceed the following temperatures (°F):

J F M A M J J A S O N D
38 38 43 54 65 68 68 68 63 56 48 40

Exceeded Water Quality Standard:

June, 2006 - 2007, 2011, 2017, 2020, 2021

July, 1998 - 2021

August, 1999 - 2004, 2006 - 2013, 2016 - 2021

September, 1999, 2000, 2003-5, 2008-10, 2012-14, 2016-21

July Mean (1998 - 2021) = 21.80

August Mean (1998 - 2021) = 21.10

September Mean (1998-2021) = 21.10

- **Alcona Project - out of compliance almost 70% of the time**
 - **July - August = 89 % of the time**

2022 Repairs Needed:

Relief Wall Installation: \$650,000

2023 Repairs Needed:

DAM SAFETY: RIDM Resolution: \$1,000,000

PREVENT EQUIPT. DAMAGE: Trash Rack Ergonomics Project: \$1,160,000

DAM SAFETY: Core Wall Remediation Project: \$3,600,000

TOTAL EXPENDITURES FOR UPGRADES: \$6,410,000

DAM REMOVAL COST: \$10,000,000 (figure derived from Boardman River Dam Removal and Restoration

FOOTE DAM

Plant Commissioned: 1918

FERC License Expiration: 6/2034

Power Generated: 9 MW

Upwelling System Installed: NONE

River Management: Cold water fishery

Foote Impoundment Shoreline Ownership: 21 miles owned by Consumers Energy and 12 miles owned by the National Forest System

1994 FERC License Orders: Focused on developed recreation site improvement

CWA 401 Water Quality Certification

License Article 405 Standard for June July August = **20C** September = **17C**

License Article 405 (Croton, Hodenpyl, Tippy, Mio, Alcona, Foote Projects): Upon installation and operation of the dissolved oxygen (D.O.) and water temperature instruments required in Article 404 and in accordance with the provisions of that article, the Licensee shall maintain the following water quality limits at the Croton [Tippy, Hodenpyl, Mio, Alcona, Foote] Project when flows are greater than or equal to monthly 95 percent exceedance flows. Monthly average water temperature downstream of the project shall not exceed the following temperatures (°F):

J F M A M J J A S O N D

38 38 43 54 65 68 68 68 63 56 48 40

Exceeded Water Quality Standard:

June, 2002, 2006-8, 2013-19, 2020-21

July, 1999-2021

August, 1999-2021

September, 1998-2021

- Foote Project - out of compliance 91 % of the time during June - September
 - July - September = 100 % of the time
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2022 Repairs Needed:

PREVENT EQUIPT. DAMAGE: Trash Rack Ergonomic Project: \$2,675,000

PREVENT OIL SPILL: Governor Replacement: \$416,000

FEDERAL LAW: ADA Ramp Investigation & Remediation: \$500,000

2023 Repairs Needed:

PREVENT OIL SPILL: Governor Replacement: \$1,277,000

TOTAL EXPENDITURES FOR UPGRADES: \$4,868,000

DAM REMOVAL COST: \$10,000,000 (figure derived from Boardman River Dam Removal and Restoration)