UNITES STATES OF AMERICA 56 FERC ¶ 62,226
FEDERAL ENERGY REGULATORY COMMISSION

Midtec Paper Corporation Project No. 10674-002
Wisconsin

ORDER ISSUING LICENSE
Major Constructed Project
(Issued September 27, 1991)

The Midtec Paper Corporation (Midtec), filed a license application under Part I of the Federal Power Act (Act) to operate and maintain the existing but unlicensed 2,700-kW Midtec Project located on the Fox River, in Outagamie County, Wisconsin. Midtec is not proposing to add any new capacity, or make any major modifications to the project. The Fox River is a navigable waterway of the United States 1/ and the project uses surplus water or water power from a Corps of Engineers dam.

Notice of the application has been published. The comments filed by agencies and individuals have been fully considered in determining whether to issue this license. The Wisconsin Department of Natural Resources filed a motion to intervene in order to be a party to the proceeding.

License Term/Back Annual Charges

This project should have been licensed in 1938, the year when the Fox River was found navigable.

As is proposed here, for projects involving no new construction, the Commission's practice is to issue licenses that expire 30 years from issuance. Because this project should have been previously licensed and for the purpose of assessing annual charges, the effective date of this license will be backdated 20 years, and the license will expire 30 years from issuance, for the maximum term permitted under the Act.

Annual charges will be assessed from the effective date. Moreover, in order to place the licensee in the same position as it would have been had the project been licensed in 1938, the licensee will be required to pay an amount equivalent to the annual charges that would have been due for the period between December 1, 1938, and September 30, 1971.

Comprehensive Development

Sections 4(e) and 10(a)(1) of the Federal Power Act (Act) require the Commission to give equal consideration to all uses of the waterway on which a project is located. When the Commission reviews a proposed or existing project, recreation, fish and

1/ See 33 FPC 335.(1965)

wildlife, and other nondevelopmental values of the waterway are considered equally with power and other developmental values. In determining whether, and under what conditions, a hydropower license should be issued, the Commission must weigh the various economic and environmental tradeoffs involved in the decision.

1. Recommended Alternative

We examined the proposed project, the proposed project with Interior's, WDNR's, and our enhancement measures, and the no-action alternative. We have selected to issue a license for the proposed project with our enhancement measures because: (1) with enhancement measures, the environmental effects of continuing to operate the project would be beneficial; and (2) the continued production of low-cost electricity using a renewable resource would contribute to the economic viability of Midtec's mill operation, and would reduce the use of fossil-fueled, electric generating plants, thereby conserving nonrenewable energy resources, and reducing atmospheric pollution and global warming.

Our Environmental Assessment (EA) evaluates and compares the effects of operating the Midtec proposal and discusses measures we are requiring in this license to enhance environmental resources at the project. The enhancement measures include: (1) continued run-of-river project operation; (2) implementation of a contingent stream gage monitoring plan; (3) cooperation with the Remedial Action Plan (RAP) in allowing access to the project and temporary modification of project operation to facilitate the treatment or removal of contaminated sediments in the Fox River; (4) preparation and implementation of a plan to monitor bald eagle feeding in the project area including means for reducing or preventing bald eagle feeding should the FWS determine that there

is a contamination threat; and (5) preparation of a cultural resources management plan before implementing any changes to the existing project structures or the way the project is operated. With the exception of the bald eagle monitoring plan, Midtec has agreed to our required enhancement measures.

2. Developmental and Nondevelopmental Uses of the Waterway

Licensing the Midtec Project with our required measures would provide several benefits. The existing powerhouse would continue to provide low-cost, 25-Hertz electricity to the Midtec mill, thereby maintaining the mill's viability while continuing to provide over 1,000 jobs. Also, run-of-river operation and stream flow monitoring would continue for the term of the license. Further, licensing the project would ensure that Midtec cooperates with the RAP, contributing to long-term efforts to clean-up and/or remove toxic sediments from the Fox River. This would not only benefit aquatic organisms, but also those species that feed on them. Finally, licensing the project would bring the existing project works, which are National Register eligible

as an historic district, under Federal jurisdiction and would thereby afford them the protection under Section 106 of the National Historic Preservation Act, and through our license.

Our economic analysis of the project, in the Safety and Design Assessment (S&DA), concludes that the project is economically beneficial. Since no new construction is proposed, the only project costs result from actual project operation. The current cost of the project's power, according to Midtec, is about 15 mills per kWh. The costs of our enhancement measures would not add significantly to the project's cost and are minor when compared to the environmental benefits. Alternate energy, if it were purchased, would cost Midtec about 37 mills per kWh. This energy would then have to be converted (an added cost) to 25 Hertz, to match Midtec's mill equipment. Alternate energy, if it were derived from fossil fuel sources, besides being more expensive, would contribute to atmospheric pollution and global warming. 2/

Section 10(a)(2) of the Act requires the Commission to also consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. Under section 10(a)(2), federal and state agencies filed 38 comprehensive plans that address various resources in Wisconsin. Of these, the staff identified and reviewed 6 plans relevant to this project. 3/ No conflicts were found.

2/ The production of power via coal combustion, for example, equivalent to the power that is produced at the existing Midtec project would release about 1.85 tons of sulfur dioxide, 15.8 tons of nitrous oxides, 1.58 tons of carbon monoxide, and 9,570 tons of carbon dioxide into the atmosphere annually. Sulfur dioxide and nitrous oxide are considered significant contributors to the production of acid

rain. Carbon dioxide is considered a significant contributor to global warming.

3/ Upper Fox River Basin areawide water quality management plan, 1979, Wisconsin Department of Natural Resources; Statewide comprehensive outdoor recreation plan, 1985, Wisconsin Department of Natural Resources; Wisconsin water quality: report to congress, 1986, Wisconsin Department of Natural Resources; Lower Green Bay remedial action plan for the lower Fox River and lower Green Bay area of concern, 1988, Wisconsin Department of Natural Resources; Winnebago comprehensive management plan, 1989, Wisconsin Department of Natural Resources; The nationwide rivers inventory, 1982, Department of the Interior.

Based on our review of the comments filed on this project by Midtec, the agencies and the public, and on our independent analysis pursuant to sections 4(e), 10(a)(1) and 10(a)(2) of the Act, we find that the proposed Midtec Project is best adapted to a comprehensive plan for the proper use, conservation, and development of the Fox River and other project-related resources.

Fish and Wildlife Recommendations

Pursuant to section 10(j) of the Act, the Environmental Assessment (EA) addresses the concerns of the Federal and state fish and wildlife agencies and the license includes conditions consistent with recommendations of the agencies.

Summary of Findings

An EA was issued for this project. Background information, analysis of impacts, support for related license articles, and the basis for a finding of no significant impact on the environment are contained in the EA attached to this order. Issuance of this license is not a major federal action significantly affecting the quality of the human environment.

The design of this project is consistent with the engineering standards governing dam safety. The project will be safe if constructed, operated and maintained in accordance with the requirements of this license. Analysis of related issues is provided in the S&DA attached to this order.

We conclude that the project would not conflict with any planned or authorized development, and would be best adapted to comprehensive development of the waterway for beneficial public uses.

The Commission orders:

(A) This license is issued to the Midtec Paper Corporation (Licensee), for a period effective October 1, 1971, and expiring

September 30, 2021, to operate and maintain the Midtec Project. This license is subject to the terms and conditions of the Act, which are incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the Act.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by exhibit G:

Exhibit G-	FERC No. 10674-	Showing
G-1	4	Project Boundary
G-2	5	Project Location

(2) Project works consisting of: (1) a powerhouse located at the south abutment of Cedars Dam, constructed of reinforced concrete and brick masonry, about 152 feet long, 44 feet wide, and 61 feet high; (2) powerhouse generating equipment consisting of three adjustable blade propeller turbine-generator units, each rated at 900 kilowatts (kW), 480 volts (V) and 25 Hertz (HZ); (3) powerhouse switchgear delivering the project energy at the generator voltage and frequency to the adjacent paper factory; and (4) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of exhibits A and F recommended for approval in the attached Safety and Design Assessment.

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project and located within or outside the project boundary, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The exhibit G described above and those sections of exhibits A and F recommended for approval in the attached Safety and Design Assessment are approved and made part of the license.

(D) This license is subject to the following articles submitted by the Detroit District of the U.S. Army Corps of Engineers under section 4(e) of the Act:

Article 101. The operation and maintenance policies of Project No. 10674 that, in the judgment of the Corps, may affect the structural integrity or operation of the project shall be subject to periodic inspections or continuous monitoring by the Corps. Any operation and maintenance deficiencies or difficulties detected by the Corps' inspection shall be immediately reported to the Regional Director of the Federal Energy Regulatory Commission. Upon review, the Regional Director shall refer the matter to the Licensee for appropriate action. In cases where operation or maintenance practices or deficiencies of Project 10674 may create a condition posing imminent danger to the structural integrity and safety of the Project, the Corps' inspector has the authority to stop operation or maintenance while awaiting the resolution of the problem.

Article 102. No later than 6 months after the effective date of this license, the Licensee must submit for approval a regulating plan to the Corps. The regulating plan must describe (a) the designed mode of hydropower generation, and (b) reservoir flow diversion and regulation requirements as established by the Corps for operation of the Project. In addition, the Licensee, shall enter into an operating Memorandum of Agreement (MOA) with the Corps describing the detailed operation of Project No. 10674 acceptable to the Corps. The MOA shall specify any restrictions needed to protect the primary purposes of the Corps' Project for navigation, recreation, water quality, and flood control. The Regional Director of the Federal Energy Regulatory Commission shall be invited to attend meetings regarding the agreement. The MOA shall be subject to revision by mutual consent of the Corps and Licensee as required by basin conditions and project operation. In the event the Licensee and the Corps fail to reach an agreement, the matter will be referred to the Federal Energy Regulatory Commission for resolution.

Article 103. The Licensee shall have no claim under this license against the United States arising from the effect of any changes in the operation or reservoir levels of the Corps of Engineers' Fox River Project. The Licensee recognizes that the Corps of Engineers is conducting a review of the Fox River Project, to include the dams on the lower Fox River, under the authority of Section 216 of the Flood Control Act of 1970 (Public Law 91-611). The purpose of the review is to determine whether there is a Federal interest in continuing to operate and maintain the Fox River Project.

(E) This license is subject to the articles set forth in Form L-5, (October 1975), entitled "Terms and Conditions of

License for Constructed Major Project Affecting Navigable Waters and Lands of the United States," and the following additional articles:

Article 201. The Licensee shall pay the United States the following annual charges as determined by the Commission from October 1, 1971 to September 30, 2021, for the purposes of:

a. Reimbursing the United States for the cost of administration of Part I of the Act. The authorized installed capacity for that purpose is 3,600 horsepower.

b. Recompensing the United States for utilization of surplus water or water power from a government dam.

Article 202. The Licensee, shall pay the United States an amount equal to the annual charges that would have been assessed for the period December 1, 1938 to September 30, 1971, if the project had been licensed during that period. The authorized installed capacity for that purpose is 3,600 horsepower.

Article 203. Within 90 days from the date of issuance of this license, the Licensee shall file with the Commission: (a) a statement which includes the dates and amounts of each change in installed capacity of the project since December 1, 1938; (b) a statement showing the gross amount of power generation for the project in kilowatt-hours for each calendar year commencing December 1, 1938, in accordance with the provisions of 18 C.F.R. Part 11 of the Commission's regulations.

Article 204. Pursuant to Section 10(d) of the Act, after the first 20 years of operation of the project under license, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The Licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, accumulated after the first 20 years of operation under the license, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year after the first 20 years of operation under the license, the Licensee shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The Licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The Licensee shall maintain the amounts established in the project amortization reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly includable in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such

ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10 year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 401. To the extent possible within the constraints established by the Department of the Army, Detroit District, Corps of Engineers (Corps), the Licensee shall operate the Midtec Project in a run-of-river mode for the protection of water quality and aquatic resources in the Fox River. The Licensee shall at all times act to minimize the fluctuation of the reservoir surface elevation by maintaining a discharge from the project so that, at any point in time, flows, as measured immediately downstream from the project tailrace, approximate the

sum of inflows to the project reservoir. Instantaneous run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the Licensee, and for short periods upon mutual agreement among the licensee, the Corps, and the Wisconsin Department of Natural Resources. If the flow is so modified, the Licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 402. The Contingent Stream Gaging and Monitoring Plan, filed with the Commission on December 11, 1990, is approved and made part of this license. The plan provides for the construction and operation of an equivalent stage recording station that shall be used to ensure compliance with the run-of-river operation stipulated in article 401. The plan shall be implemented in the event the Corps of Engineers elects to discontinue the existing stage recording station at Cedars Lock and Dam. The Commission reserves the right to require changes, if needed, in the gaging and monitoring plan if implemented in the future.

Article 403. The Licensee shall cooperate with the Wisconsin Department of Natural Resources (WDNR) in the implementation of the Lower Green Bay Remedial Action Plan (RAP). Such cooperation shall include allowing the WDNR or other agencies involved with the implementation of the RAP reasonable access to the project area. Further, the project's instantaneous run-of-river mode of operation, specified in Article 401, may be temporarily modified, should such modifications be necessary to facilitate the treatment or removal of contaminated sediments in the Fox River.

Article 404. Within 90 days from the issuance of a license for the project, the Licensee shall prepare, and file with the Commission for approval, a plan for monitoring wintering bald eagles (Haliaeetus leucocephalus) feeding in the Fox River

immediately downstream from the project in the area of the project tailrace. Additionally, the Licensee, in the event the FWS determines that there is a contaminant threat to any bald eagles feeding in the project tailrace, within 90 days from such a finding, shall develop and file with the Commission for approval, a plan to reduce or prevent bald eagle use of the open tailwater area of the project during winter.

The Licensee shall prepare the plans after consultation with the U.S. Fish and Wildlife Service (FWS), and the Wisconsin Department of Natural Resources (WDNR). The Licensee shall include with the plans documentation of consultation and copies of agency comments or recommendations on the completed plans after they have been prepared and provided to the agencies, and specific descriptions of how the agency comments are accommodated by the plan. The Licensee shall allow a minimum of 30 days for

the agencies to comment and to make recommendations prior to filing the plans with the Commission. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plans. Upon Commission approval the Licensee shall implement the plans, including any changes required by the Commission.

Article 405. The Licensee, before implementing any changes to the existing project structures or to the way these structures are operated, other than those specifically authorized in this license, shall consult with the State Historic Preservation Officer (SHPO), and file for Commission approval a cultural resource management plan prepared by a qualified cultural resource specialist after having consulted with the SHPO. The management plan shall include the following items: (1) a description of the proposed change; (2) a description of the proposed change's potential effect on the eligible property; (3) proposed measures for avoiding or mitigating adverse effects; (4) documentation of the nature and extent of consultation; and (5) a schedule for mitigating effects and conducting additional studies. The Commission may require changes to the plan. The Licensee shall not make changes to the existing project structures or the way these structures are operated, other than those specifically authorized in this license, until informed that the requirements of this article have been fulfilled.

Article 406. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational,

and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, cancelling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and water for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expan-

sion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed. If no conveyance was made during the prior calendar

year, the Licensee shall so inform the Commission and the Regional Director in writing no later than January 31 of each year.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Hydropower Licensing, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked exhibit G or K map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from

the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved exhibit R or approved report on recreational resources of an exhibit E; or, if the project does not have an approved exhibit R or approved report on

recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land : (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to insure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters.

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised exhibit G or K drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(E) The licensee shall serve copies of any Commission filing required by this order on any entity specified in this order to be consulted on matters related to that filing. Proof of service on these entities must accompany the filing with the Commission.

(F) This order is issued under authority delegated to the Director and constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of this issuance of this order, pursuant to 18 C.F.R. 385.713.

Fred E. Springer
Director, Office of
Hydropower Licensing

ENVIRONMENTAL ASSESSMENT

FEDERAL ENERGY REGULATORY COMMISSION
OFFICE OF HYDROPOWER LICENSING
DIVISION OF PROJECT REVIEW

Date: September 25, 1991

Midtec Hydroelectric Project

FERC Project No. 10674-000

A. APPLICATION

1. Application type: Major Original License
2. Date filed with the Commission: March 27, 1990
3. Applicant: Midtec Paper Corporation (Midtec)
4. Water body: Fox River River basin: Fox-Wolf
5. Nearest city or town: Kimberly
6. County: Outagamie State: Wisconsin

B. PURPOSE AND NEED FOR POWER

The Midtec Hydroelectric Project would continue to generate about 8,200 megawatthours (MWh) of electric energy per year. The project consists of an existing, operating, but unlicensed powerhouse at the south end of Cedars dam with an installed capacity of 2,700 kilowatts (kW). All of the power produced would continue to be used to power the existing Midtec paper mill. The mill, which employs about 1,100 people, currently relies on this low-cost hydropower to remain competitive.

The project's three generating units, originally installed in 1926, generate electricity at a frequency of 25 Hertz, versus the national standard frequency of 60 Hertz. This nonstandard frequency makes the project power especially valuable to Midtec and practically useless to other users not equipped with 25-Hertz equipment. Like any other paper-product producer, Midtec's manufacturing costs are energy intensive. Low-cost hydropower enhances Midtec's economic viability by reducing production costs in this highly-competitive industry which is very important to the local economy.

The energy generated by the project costs about 1.5 cents/kilowatthour (c/kWh). If Midtec had to use power purchased from a local utility, they would be forced to convert from 25 to 60-Hertz machinery. Such conversion costs would be expensive, plus the average cost of the purchased power would more than double to about 3.7 c/kWh (including allowances for peak period and demand charges). If Midtec had to absorb these costs, its competitive position in the market would suffer greatly.

C. PROPOSED PROJECT AND ALTERNATIVES

1. Description of the proposed action (see figure 1).

The Midtec Project is located at the south end of Cedars Lock and Dam which is owned and operated by the Department of the Army, Detroit District, Corps of Engineers (Corps). The dam is a 13-foot-high concrete gravity structure founded on bedrock with a 180-foot, mid-channel sluiceway and 7 tainter gates. The dam includes a 263-foot spillway on its south end and a 211-foot spillway on its north end. The spillway crest elevation is 698.66 feet. An earthen dike joins the dam to the navigation lock, located on the river's northern side.

The existing project works consist of a 152-foot-long by 44-foot-wide brick and masonry powerhouse that contains three, 900-kW generating units which discharge directly into the Fox River. There is no substation or transmission line associated with the project. Project power is fed directly into the adjacent paper mill circuits. The project would continue to be operated in a run-of-river mode. Midtec does not propose any changes to project facilities or project operation.

2. Applicant's proposed mitigative or enhancement measures.

Midtec would continue to operate the project in a run-of-river mode. Midtec would also cooperate with the Lower Green Bay Remedial Action Plan (RAP) by permitting reasonable access to the project by the Wisconsin Department of Natural Resources (WDNR) and other agencies to facilitate the treatment or removal of contaminated sediments.

3. Federal lands affected.

X Yes; Corps of Engineers Lock and Dam;

X Conditions pursuant to Section 4(e) of the Federal Power

Act have been provided in the Corps letter dated 09-07-90 (attachment A) for the adequate protection and use of federal lands.

The following is a summary of the Section 4(e) conditions:

a. The project works shall be subject to periodic inspections by the Corps, and any operation or maintenance deficiencies detected shall be immediately reported to the Commission. Also, the Corps can stop operation if conditions pose a threat to the structural integrity of the Corps project.

b. Midtec shall submit to the Corps for approval, an operating plan and shall enter into an operating Memorandum of Agreement (MOA) with the Corps on operation of the powerhouse.

c. Midtec shall have no claim against the United States arising from the effect of any changes in the operation or reservoir levels of the Corps project.

4. Alternatives to the proposed project.

a. X No reasonable action alternatives have been found.

b. Alternative of no action.

Under the no-action alternative (maintaining existing conditions), Midtec would not be required to provide any mitigative or enhancement measures. There would be no change in the existing environment at the project site.

D. CONSULTATION AND COMPLIANCE

1. Fish and wildlife agency consultation (Fish & Wildlife Coordination Act).

a. U.S. Fish & Wildlife Service (FWS):	X Yes.	No.
b. State(s):	X Yes.	No.
c. National Marine Fisheries Service	Yes.	X No.

2. Section 7 consultation (Endangered Species Act).

a. Listed species:	None.	X Present:
b. Consultation:	X Not required.	
	Required; completed:	/ / .

Remarks: Bald eagles (Haliaeetus leucocephalus), a federally listed, threatened species in Wisconsin, breed and winter along the lower Fox River.

3. Section 401 certification (Clean Water Act).

Not required.

X Required; applicant requested certification on 2-26-90.

Status: Waived by the certifying agency on 3-13-90.

4. Cultural resource consultation (Historic Preservation Act).

a. State Historic Preservation Officer: X Yes No.
b. National Park Service (NPS): X Yes No.
c. National Register status: None X Eligible or listed.
d. Council: See remarks below.
e. Further consultation: X Not required. Required.

Remarks: We consulted with the Wisconsin State Historic Preservation Officer (SHPO) and the Advisory Council on Historic

Preservation by letters dated July 11, 1991, in which we stated that the existing hydroelectric power plant, also known as the Kimberly Hydroelectric Historic District and the Kimberly-Clark Hydroelectric Plant, are eligible for listing on the National Register of Historic Places, and that the effect of the licensing would not be adverse. The SHPO concurred by letter dated August 12, 1991, and the Council by letter dated September 20, 1991.

5. Recreational consultation (Federal Power Act).

f. U.S. Owners:	X Yes.	No.
g. NPS:	X Yes.	No.
h. State(s):	X Yes.	No.

6. Wild and scenic rivers (Wild and Scenic Rivers Act).

Status: X None Listed.

7. Land and Water Conservation Fund lands and facilities (Land and Water Conservation Fund Act).

Status: X None. Designated.

E. COMMENTS

1. The following agencies and entities provided comments on the application in response to the public notice dated 06-14-90. Midtec responded to the agency comments by letter dated 10-01-90.

Commenting agencies and other entities	Date of letter
Department of the Interior	August 13, 1990
Department of the Army, Detroit District, Corps of Engineers	September 7, 1990

2. The following entities filed motions to intervene and become parties to the proceedings.

Interveners	Date of motion
Wisconsin Department of Natural Resources	August 9, 1990

F. AFFECTED ENVIRONMENT

1. General description of the locale.

a. Description of the Fox-Wolf River Basin.

The Fox-Wolf River Basin is located in northeast Wisconsin.
The basin drains about 6,430 square miles and includes the Fox

River, Lake Winnebago, and the Wolf River. The Fox, a tributary of Lake Michigan, enters the lake at Green Bay after flowing about 176 miles in a northeast direction from its source in Columbia County, Wisconsin. The basin has a continental to semi-maritime climate, greatly influenced by the Great Lakes. Basin climate is generally humid with cool summers and cool winters.

The segment of the Fox River from Lake Winnebago to Green Bay is known as the lower Fox, and the section above the lake, the upper Fox. The lower Fox is 39 miles long, has an average slope of about 4.3 feet per mile and a channel width of 500 to 1000 feet. Lands along the lower Fox River have been highly developed industrially. There are 15 paper and pulp mills on the lower Fox between Neenah-Manasha and DePere, and 8 licensed hydroelectric projects. The Midtec Project is located on the lower Fox at river mile 27.7 between the Appleton and Little Chute Hydroelectric developments.

b. Number of major and minor licensed, and exempted projects in the Fox River Basin as of July 25, 1991.

Major Licensed - 6; Minor Licensed - 2; Exempted - 0

c. Number of pending license applications in the basin as of July 25, 1991.

Major License - 1 (Midtec)

d. Target resource.

A target resource is an important resource that may be cumulatively affected by multiple development within the basin. We have identified water quality as a target resource for the Fox-Wolf River Basin.

The continued operation of the Midtec Project has the potential to contribute to cumulative adverse impacts to water quality through the release of contaminates from sediments deposited behind the project dam. However, recommended license conditions would allow the agencies involved with the RAP to access the project area to determine the presence of toxic materials in the accumulated sediments. Further, license conditions would require modification to project operations as

necessary to initiate treatment or removal of contaminated sediments. Water quality is further described below in section 2.c. We conclude that continued operation of the project would have a negligible effect on cumulative impacts to water quality in the Fox River.

2. Descriptions of the resources in the project impact area (Source: Midtec Paper Corporation, 1990, application, exhibit E, unless otherwise indicated).

a. Geology and soils: Project area geology developed from glacial activity. Area bedrock consists of dolomite with some limestone. Soils are glacial and are predominantly of the Kawaunee and Manawa associations. No construction or changes in project operation are proposed. Therefore, geologic and soils resources would not be affected.

b. Streamflow: Flows are estimated from the Midtec flow duration curve developed from U.S. Geological Service data collected near Wrightstown, Wisconsin, since 1918.

low flow: 1,650 cfs; flow parameter: flow exceeded 90 percent of the time.

high flow: 7,600 cfs; flow parameter: flow exceeded 10 percent of the time.

average annual flow: 4,100 cfs.

c. Water quality: The lower Fox River is highly industrialized. Fourteen pulp and paper mills and five major municipal wastewater treatment facilities discharge directly into the river. In addition, non-point source pollutants enter the river via run-off from urban and agricultural areas and from landfills. During the 1930's to the 1970's, high biological oxygen demands (BOD's) from pollutants resulted in low dissolved oxygen (DO) levels severely limiting the number and diversity of aquatic organisms in the river; fish kills were frequent (Wisconsin Department of Natural Resources, 1988). In the early 1970's, the state of Wisconsin began implementing pollution abatement measures, which included monitoring water quality and allocating wastewater discharges through a permitting system. Wastewater treatment facilities were upgraded to reduce the BOD loadings. Subsequently, water quality of the lower Fox River has greatly improved.

Past land use practices, wastewater discharges, and industrial development have contributed to the accumulation of polychlorinated biphenyls (PCBs), pesticides, and other hazardous

materials in the sediments in many portions of the Fox River. The reintroduction of toxic substances into the river from these sediments continues to be a major problem. The WDNR has begun to implement a remedial action plan for improving water quality, which includes initiating feasibility studies for controlling contaminated sediments in the lower Fox River (Wisconsin Department of Natural Resources, 1988).

Currently, the WDNR classifies the Fox River at the proposed project site as one that must meet standards for Fish and Aquatic Life, and for Recreational Use. The standards for Fish and Aquatic Life include a minimum DO concentration of 5 milligrams per liter (mg/l), natural daily/seasonal temperature fluctuations

maintained with temperature not to exceed 89 degrees Fahrenheit (F) for warm water fish, a Ph within the range of 6.0 to 9.0, and substance toxicity concentrations within the Environmental Protection Agency (EPA) guidelines. Midtec's 1990 DO study showed that the existing project operation has no significant impact on DO concentrations downstream in the lower Fox River (Midtec, 1990b). During the study, all downstream DO concentrations were measured above the Wisconsin state water quality standard of 5 mg/l and stratification was not significant.

d. Fisheries: Anadromous: X Absent. Present.
Resident: Absent. X Present.

Game fish in the vicinity of the project include walleye, northern pike, smallmouth bass, white bass, channel catfish, yellow perch, rock bass, and pumpkinseed sunfish. Nongame fish include burbot, longnose gar, carp, white sucker, quillback, sheepshead, black bullhead, emerald shiner, log perch, bluntnose minnow, spotfin shiner, spottail shiner, and mooneye. The WDNR has issued a fish consumption advisory for the Lower Fox River because fish tissue samples from that area have been found to contain varying levels of contaminants such as PCB's and pesticides. Additionally, the Rapide Croche Lock (downstream) was closed to navigation in 1988 to prevent the migration of sea lamprey up the Fox River system.

e. Vegetation: The immediate project vicinity is an industrial development. The surrounding area is urban and agricultural.

Cover type	Dominant species
scattered woodlots and urban areas	red oak, black oak, silver maple, hickory, beech, red maple
wetlands	cottonwood, box elder, elm, ash, Japanese honeysuckle, cattails, bulrushes

f. Wildlife: Species in the immediate project area are primarily those that can tolerate urban areas and human

activities. Species that may occur in the vicinity include: deer, beaver, mink, muskrat, groundhog, weasel, rabbit, otter, squirrel, Canada geese, mallards, golden eyes, mergansers, black duck, teal, wood duck, great horned owl, screech owl, rough-legged hawk, American kestrel, red-tailed hawk, osprey and bald eagles.

g. Cultural: There are properties listed on, or eligible for listing on, the National Register of Historic Places in the area of the project's potential environmental impact. The

existing hydroelectric power plant, also known as the Kimberly Hydroelectric Historic District and the Kimberly-Clark Hydroelectric Plant, was established in 1889 and is eligible for listing on the National Register of Historic Places. The district consists of two contiguous, contributing resources, both structures: the Kimberly hydroelectric plant (no. 1) and the Cedars dam. There are no noncontributing resources. Documentary research into the history of the mill complex establishes its eligibility in the area of architecture, as the first midwestern work by the premiere paper mill architect of the late nineteenth century, Ashley B. Tower. Moreover, it is eligible in the area of engineering as the birthplace of refined, bleached groundwood pulp, an important technological breakthrough for the production of rotogravure paper. In the area of industry, the plant represents an important development of an internationally prominent papermaking company, Kimberly-Clark. On the local level, the mill was responsible for establishing the surrounding community of Kimberly, the namesake of one of the company's founders.

h. Aesthetics: The project is located in a highly industrialized section of the Fox River, adjacent to a large paper mill. The site can be viewed from State Highway 96, a trailer park on the north side of the river, and from the river itself. Midtec proposes no changes to the project. There would be no effect on aesthetic resources.

i. Recreation: Boating has been the main outdoor activity in the project area. Recreational boats made up 94.5 percent of the total boating use of the Lower Fox waterway during 1983. Between 1983 and 1987, Cedars Lock averaged 450-500 lockages annually. Cedars Lock, however, has not been operated for navigation since 1987. The Corps and the state of Wisconsin are currently negotiating resumption of lock operation. The Corps would like to turn over all lock operation on the Fox River to

the state of Wisconsin. A public boat launch is located about 0.7 miles upstream of the project. Boat access to the river downstream between the Midtec and the Little Chute Project, FERC No. 2588, (about 1 mile downstream) has been historically provided via Cedars Lock.

j. Land use: The project is located within the village of Kimberly. Land use is primarily industrial with some commercial, residential, and agricultural areas.

k. Socioeconomics: The paper industry maintains a primary influence in Outagamie County. About 35 percent of the county's jobs are paper industry related.

G. ENVIRONMENTAL ISSUES AND PROPOSED RESOLUTIONS

There are 6 issues addressed below.

1. Project operation and monitoring:

(a) Run-of-river operation. Midtec presently operates and proposes to continue operating the project in a run-of-river mode, in which instantaneous inflow to the project impoundment equals instantaneous outflow.

The WDNR recommends that the project operate in an instantaneous run-of-river mode and that in operating the project, fluctuations of the pool elevation be kept to a minimum by maintaining sufficient discharge from the project so that flow downstream approximates instantaneous inflow to the project impoundment. The WDNR further recommends that Midtec maintain the pool elevation within levels established by the Corps.

Pool elevations in the project's impoundment are presently controlled by the Corps. The Corps, therefore, has control of flows in the river and generally ensures that downstream flows equal inflows to the impoundment (i.e., run-of-river operation).

Continued operation of the proposed project in an instantaneous run-of-river mode would minimize fluctuations of the surface elevation of the impoundment associated with the Midtec Project, and would maintain the natural volume and periodicity of stream flow downstream of the project. Thus, aquatic resources in the Fox River downstream of the project would be protected. Since the project would not alter streamflow in the Fox River above or below the project, fish and wildlife habitats, including wetland areas, would not be affected by project operation. Therefore, we conclude that the proposed project should be operated in an instantaneous run-of-river mode, within guidelines established by the Corps, to protect upstream and downstream fish and wildlife habitats. This mode of operation may be modified for operating emergencies beyond the control of Midtec, and for short periods of time upon mutual agreement between Midtec and the WDNR.

In addition, Midtec would be required to enter into, as a

4(e) condition identified by the Corps, a Memorandum of Agreement with the Corps describing the detailed operation of the power facilities acceptable to the Corps.

(b) Project monitoring. Pool elevations at the project are currently monitored by the Corps. A continuous stage recorder is used and the records are available for public inspection.

The WDNR recommends that Midtec develop a contingency plan for monitoring project pool elevations to assure compliance with instantaneous run-of-river operation in the event that the Corps abandons the Cedar Lock and Dam in the future.

Midtec, in response to the WDNR's request, developed a contingency plan for monitoring pool levels to be implemented in the event that the Corps ceases to collect and maintain such data in the future. Midtec filed the plan with the Commission in its submittal dated December 11, 1990. WDNR reviewed the contingency plan and states that the plan is acceptable.

We conclude that the current pool elevation monitoring system employed by the Corps at the project is adequate to ensure compliance with the run-of-river operational mode. However, although it is not foreseeable, in the event that the Corps were to abandon the Cedar Lock and Dam in the future, Midtec should be required to implement its "Contingent Stream Gaging and Monitoring Plan" as outlined in its December 11, 1990, filing to assure compliance with our recommended run-of-river mode of operation.

2. Implementation of the Lower Green Bay Remedial Action Plan (RAP): The WDNR recommends that Midtec cooperate with the WDNR in the future implementation of the RAP, which may include allowing reasonable access to agencies involved in the implementation of the RAP and temporary modification of instantaneous run-of-river operation and pool level maintenance as necessary to facilitate treatment or removal of contaminated sediments in the river. Additionally, the WDNR recommends that the operation of the project should be consistent with the recommendations of the RAP and the Lake Winnebago Comprehensive Management Plan (CMP).

The WDNR estimates that contaminated river sediments contribute to greater than 80 percent of the PCB loads entering Green Bay from the Fox River. Potentially, most of these contaminates may be found in the organic sediments deposited behind dams on the lower Fox River. As part of the RAP, studies will be initiated to identify areas in the Fox River containing

sediments with high concentrations of hazardous materials. Once these areas are located, appropriate treatment measures for these sites would be evaluated and undertaken (Wisconsin Department of Natural Resources, 1988).

We have reviewed the various aspects of the RAP and the CMP that address waterway management in relation to the proposed project and have concluded that there are no inconsistencies with the implementation of the plans and the continued operation of the Midtec Project.

We further conclude that Midtec should cooperate with the WDNR and other agencies involved with the RAP during its implementation. Such cooperation should include allowing agency personnel access to the project area to study the accumulated sediments to determine the presence of toxic materials. Midtec should modify the project's instantaneous run-of-river mode of

operation, if necessary, to implement treatment measures for contaminated sediments in the Fox River. Terms and conditions of the license would provide for future studies, as needed, for the protection and enhancement of fish and wildlife resources. Such studies may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the WDNR, after notice and opportunity for public hearing.

3. Cumulative impacts on water quality: The WDNR recommends that Midtec complete a DO study and develop and implement a plan to improve DO levels in the Fox River should the study show that project operation contributes to DO depletion in the river. Midtec conducted the DO study in August of 1990. We have reviewed the results of the study and conclude that the project has no impact on downstream DO levels in the Fox River. The WDNR has also reviewed the study results and concurs that the project has no affect on downstream DO levels (memo from Ronald L. Fassbender, Water Management Supervisor, Wisconsin Department of Natural Resources, Green Bay, Wisconsin, November 10, 1990).

Initial efforts to improve water quality within the lower Fox River Basin and lower Green Bay, as recommended in the RAP, would focus on: (1) increasing nonpoint source pollution controls to reduce sediment and phosphorous loadings; (2) protecting marsh and wetland areas from further loss and degradation through public and private purchase and maintenance; (3) controlling discharges of toxic substances through permit regulations; and (4) initiating a feasibility study for control of contaminated sediments in the Fox River (Wisconsin Department of Natural Resources, 1988).

The lower Fox River Basin contains nine hydropower projects in addition to the proposed licensing of the Midtec Project. Of

the action items listed in the RAP, the continued operation of the Midtec Project has the potential to contribute to cumulative adverse impacts to water quality through the release of contaminates from sediments deposited behind the project dam. Since the extent of sediment contamination at each of the hydroelectric facilities on the lower Fox River has not been quantified, each project has the potential to cumulatively contribute to the release of toxic materials to the river.

By operating the Midtec Project in an instantaneous run-of-river mode, the potential for resuspension of contaminated bottom sediments would be reduced through minimizing fluctuations of the impoundment's water surface elevations. Further, Midtec would be required to cooperate with the implementation of the RAP. The involved agencies would be granted access to the project area to study the accumulated sediments for the presence of toxic materials. The project's potential to contribute to cumulative impacts by releasing toxic materials in accumulated sediments

would be further reduced by modifying project operations to allow for treatment of contaminated sediments.

4. Bald eagle protection: Interior states that there is evidence that bald eagles breed and winter in the lower Fox River area. There is an active bald eagle nest at river mile 22, between Kaukauna Lock No. 5 and the Badger Rapide Croche dam, about 5.5 miles downstream from the Midtec Project. The bald eagles using this nest produced young during 1988 and 1989. During 1990 an egg was laid which did not hatch. Noting that bald eagles are known to feed near dams, particularly in open water areas provided by dams during the winter, the U.S. Fish and Wildlife Service (FWS) believes that this reproductive failure may be due to contaminant loading in bald eagles that feed on contaminated fish in the Fox River 4/.

Interior concludes that no further action pursuant to the Endangered Species Act of 1973 is necessary if any license issued for the Midtec Project requires (1) a study evaluating the feeding habits of resident and migrant bald eagles; and (2) based on the results of the study, identification of necessary measures to avoid or mitigate impacts to bald eagles resulting from operation of the project.

In its December 13, 1990 letter to Midtec, the FWS recommended a year-long study that includes the following: (1) determination of the distribution of eagles along the Fox River; (2) satellite tracking of selected bald eagles to determine hourly, daily, and seasonal movements; (3) observation of the project's tailrace to determine if eagles feed there on a year round basis; (4) if eagles feed at the project, quantification of what they are eating; and (5) chemical analysis of bald eagles' prey remains to determine contaminant loading.

Midtec (1990a) concludes that continued operation of the project would not impact bald eagles and disagrees with the need for a study 5/. Midtec says, among other things, that the

4/ Subsequent analysis found that the egg contained 36 parts per million (ppm) PCB, among other contaminants (personal communication with R. Nikolai, Wildlife Biologist, Wisconsin Department of Natural Resources, Appleton, Wisconsin, August 30, 1991). PCBs are present in sediments and fish in the Fox River and may contribute to reproductive problems in bald eagles (Mead and Hunt, Inc., 1987). PCB concentration greater than 2 ppm in fish tissue is above the health standard for human consumption (Wisconsin Department of Natural Resources and Wisconsin Division of Health, 1987).

5/ The FWS did not recommend any studies during the prefiling consultation process.

project dam is government owned (i.e. the Corps) and the river downstream from the dam would remain ice-free during the winter even if the hydroelectric project were not operating; the Fox River is ice-free during most of the year, making contaminated fish available to bald eagles anywhere along the river; and toxic substances in the river are not the result of hydroelectric operation.

Mead and Hunt, Inc. (1987) concluded that because bald eagles are rare visitors to this region of Wisconsin, the continued operation of the Badger-Rapide Croche and Kaukauna Hydroelectric Projects (FERC Nos. 2677 and 1510 respectively) located downstream of the Midtec Project would pose no contaminant threats to bald eagles. The FWS concurred in that conclusion, but recommended that if bald eagles begin to use those projects' tailraces, the licensees cooperate in implementing measures to prevent or reduce bald eagles' use of open water at the projects' tailraces. The Federal Energy Regulatory Commission included a requirement in licenses issued for projects 2677 and 1510 that in the event the FWS determines that there is a contaminant threat to bald eagles feeding in the tailwater, the licensee cooperate with the FWS and the WDNR to implement a plan to reduce or prevent bald eagle use of the open tailwater areas at each of the projects.

Since 1987, bald eagle numbers have increased in the area. The 1989 and 1990 mid-winter bald eagle counts for Outagamie County found 4 and 10 birds, respectively, all near the Fox River 6/. There is a concentration of bald eagles at the Thousand Island Nature Center (Center). The Center is located along the Fox River, downstream from the project, where relatively shallow rapids remain open during the winter, providing fish and ducks as available prey for bald eagles. An active bald eagle nest was established at the Center, about 1.5 miles downstream from the project. This nest, likely established by the same pair of bald eagles that had occupied the Kaukauna nest mentioned above, produced 3 young in 1991. The increase in bald eagle numbers along the Fox River is probably due to more availability of open water during a series of relatively mild winters recently and the expansion of the bald eagle's range (personal communication, R. Nikolai, Wildlife Biologist,

Wisconsin Department of Natural Resources, Appleton, Wisconsin, August 30, 1991).

Bald eagles feed primarily on fish. Locks and dams can adversely affect wintering bald eagles because they impound large reservoirs which may freeze over more readily than a free flowing

6/ Previous years' midwinter surveys in Outagamie County found no birds in 1980, 1981, and 1984; 1 bird in 1982; and 2 birds in 1986.

river thereby preventing bald eagles from foraging for fish. However, dams with falling water, such as Cedars dam, or dams associated with powerplants, provide open water during the winter and are beneficial to bald eagles. Hydroelectric plants expose prey by keeping the water open, and thus may also be beneficial (Dunstan, 1981). In the case of the lower Fox River, open water and exposed prey may not be beneficial to bald eagles because the prey may be contaminated. While diving ducks feed on fish in the Fox River downstream from the project and bald eagles have been seen perched in nearby trees, bald eagles have not been seen feeding in this area (personal communication, R. Nikolai, Wildlife Biologist, Wisconsin Department of Natural Resources, Appleton, Wisconsin, August 30, 1991).

The sediments in the Fox River contain toxic substances and so do the fish (see sections D.2, Water quality, and D.3, Fisheries, above). Tissue of ducks feeding in the area has been analyzed and found to contain high concentrations of PCBs (personal communication, R. Nikolai, Wildlife Biologist, Wisconsin Department of Natural Resources, Appleton, Wisconsin, August 30, 1991). Bald eagles that feed on contaminated fish could suffer from illness, loss of reproduction, or mortality from contaminant poisoning. Toxic effects of environmental contaminants is one of the reasons for bald eagles' overall population decline (Grier, et al., 1983).

We conclude that the only effect to bald eagles resulting from the Midtec Project's operation, if any, would be associated with keeping the water open during winter and exposing prey that are likely to be contaminated. The Midtec Project's contribution to exposure of bald eagles to contaminated fish, would be insignificant in relation to rest of the Fox River where contaminated fish are also available most of the year and reaches are open throughout the winter.

We therefore conclude that Interior's recommendation for

Midtec to conduct a study of resident and migrant bald eagle distribution in the Fox River area as part of a detailed year-long study of bald eagle feeding at the project and prey contaminant loading is not warranted and should not be required.

Bald eagle habitat enhancement potential at the Midtec Project is very limited. We recommend, however, that any license issued require that the licensee monitor the tailrace for wintering bald eagle feeding. In the event that the FWS determines that there is a contaminant threat to bald eagles feeding in the project's tailrace, the licensee should cooperate with the FWS and the WDNR to develop and implement a plan to reduce or prevent bald eagle use of the open tailwater areas of the project.

The most effective enhancement of bald eagle habitat in the project area is the removal of the toxic contaminants from the Fox River sediments. We have recommended that Midtec cooperate

with the WDNR in the implementation of the RAP, as discussed in section G.2. One of the goals of the RAP is to remove contaminated sediments from the Fox River.

While the FWS prefers the more detailed study it recommended, our recommendations would be agreeable (personal communication, J. Fossum, U.S. Fish and Wildlife Service, Green Bay Field Office, Wisconsin, September 5, 1991).

5. Cultural Resources: We determined that only the existing project works are eligible for listing on the National Register and that there would be no adverse effect on them as a result of licensing the proposed project, because Midtec does not propose any changes in the existing project works or in the way they are operated. Adverse effects, however, could occur by implementing changes to the eligible structures or the way they are operated after licensing. Therefore, before implementing any changes to the eligible structures or the way they are operated, which we have not considered in this environmental assessment, Midtec should take the following actions: (a) consult with the SHPO; (b) based on consultations with the SHPO, prepare a plan describing the appropriate course of action and a schedule for carrying it out; (c) file the plan for Commission approval; and (d) take no steps to jeopardize the properties until notified by the Commission that all of these requirements have been satisfied.

6. Recreation: The WDNR recommends that Midtec "restore" access to the reach of the river below the project by providing a boat landing and access facility downstream between the Midtec and Little Chute Projects.

Midtec responds that there is no need to restore access to the downstream reach because access is currently provided via Cedars Lock and the lock at Little Chute Lock and Dam. Midtec further states that during prefiling consultation, Midtec met with WDNR on-site to explore boat launch options downstream. Midtec says that during the inspection it and the WDNR agreed that the only suitable location for a downstream boat launch

would be on Corps land at Little Chute Lock and Dam, the site of FERC Project No. 2588. Finally, Midtec states that the Corps is reluctant to lease this site to a private entity such as Midtec.

Currently, access to the river near the project is provided via a public boat launch at Sunset Point Park, less than 0.7 miles upstream. Neither the lock at Cedars nor the lock at Little Chute is being operated. In fact, only 3 of the 17 locks on the Fox River are being operated (personal communication, Dennis Arnoldussen, Manager, Fox River Management Commission, Kaukauna, Wisconsin, August 16, 1991). Therefore, there is currently no formal boating access to the river between the Midtec and Little Chute Projects. This is not necessarily a

permanent condition, since the state of Wisconsin is negotiating an agreement with the Corps regarding lock operation. An agreement may be reached whereby lock operation would resume. Boaters would then be able to put-in at the Sunset Point launch and gain access to the river downstream of the Project via Cedars lock. Based on the above, the lack of a suitable site, and the very small size and industrial nature of the reach in question, we do not feel that Midtec should be required to install a boat launch facility downstream of the project at this time.

Interior notes that a segment of the Fox River downstream of the project is included in the Nationwide Rivers Inventory (NRI). Interior recommends that Midtec incorporate into the project any necessary measures to maintain the recreational and historic values for which the river was included on the NRI, and suggests that Midtec consult with the appropriate agencies for guidance.

Midtec responds to this Interior recommendation by saying that they have fully complied with the consultation process and that further consultation would duplicate these efforts.

Since the Midtec project has been, and would continue to be operated run-of-river, it would not affect flows downstream in the NRI-listed segment. Also, licensing the project would bring the existing, historic project works under federal protection for the term of the license which would contribute to preserving historic values on the Fox River. Therefore, we do not believe that issuing a license for the Midtec Project would affect the values for which the downstream segment was listed. Additional consultation at this time regarding NRI values is unwarranted.

H. ENVIRONMENTAL IMPACTS

1. Assessment of impacts expected from the applicant's proposed project (P), with the applicant's proposed mitigation and any conditions set by a federal land management agency; the proposed project with any additional mitigation recommended by the staff (Ps); and any action alternative considered (A). Assessment symbols indicate the following impact levels:

O = None; 1 = Minor; 2 = Moderate; 3 = Major; A = Adverse; B = Beneficial; L = Long-term; S = Short-term.

Resource	Impact P	Impact Ps	Impact A	Resource	Impact P	Impact Ps	Impact A
a. Geology-Soils	0			f. Wildlife	1BL	1BL	
				g. Cultural:			
b. Streamflow	1BL			Archeological	0		
c. Water quality:							
Temperature	0			Historical	2BL		
Dissolved							
oxygen	0			h. Aesthetics	0		
Turbidity and							
sedimentation	0			i. Recreation	0		
d. Fisheries:							
Anadromous	0			j. Land use	0		

	Resident		0				k. Socioeconomics		0				
	e. Vegetation		0										

Remarks: c. The continued operation of the Midtec Project has the potential to contribute to cumulative adverse impacts to water quality through the release of contaminates from sediments deposited behind the project dam. However, recommended license conditions would allow the agencies involved with the RAP access to the project area to determine the presence of toxic materials in the accumulated sediments. Further, license conditions would require modification to project operations as necessary to initiate treatment or removal of contaminated sediments. Therefore, impacts to water quality resulting from continued operation of the project would be negligible.

f. Midtec's cooperation with the RAP in improving water quality of the lower Fox River by reduction or removal of toxic contaminants would benefit wildlife, particularly those species dependant on aquatic food chains.

g. Licensing this project would bring the existing project works, which are National Register eligible as an historic district, under Federal jurisdiction and would thereby afford them the protection of Section 106, National Historic Preservation Act, for the term of the license. This protection would insure long-term integrity of design, materials, feeling, association, and workmanship for the project works.

I. COMPREHENSIVE DEVELOPMENT AND RECOMMENDED ALTERNATIVE

Sections 4(e) and 10(a)(1) of the Federal Power Act (Act) require the Commission to give equal consideration to all uses of the waterway on which a project is located. When the Commission reviews a proposed project, recreation, fish and wildlife, and other nondevelopmental values of the waterway are considered equally with power and other developmental values. In determining whether, and under what conditions, a hydropower license should be issued, the Commission must weigh the various economic and environmental tradeoffs involved in the decision.

1. Recommended Alternative

We (the staff) examined the proposed project, the proposed project with Interior's, WDNR's, and our recommended measures, and the no-action alternative. The recommended option is to issue a license for the proposed project with our enhancement measures. We recommend this option because: (1) with enhancement measures, the environmental effects of continuing to operate the project would be beneficial; and (2) the continued production of low-cost electricity using a renewable resource would contribute to the economic viability of Midtec's mill operation, and would reduce the use of fossil-fueled, electric generating plants, thereby conserving nonrenewable energy resources, and reducing atmospheric pollution and global warming.

Our analysis evaluates and compares the effects of operating the Midtec proposal and discusses measures we recommend to enhance environmental resources at the project. The enhancement measures that we recommend include: (1) continued run-of-river

project operation; (2) implementation of a contingent stream gage monitoring plan; (3) cooperation with the RAP in allowing access to the project and temporary modification of project operation to facilitate the treatment or removal of contaminated sediments in the Fox River; (4) preparation and implementation of a plan to monitor bald eagle feeding in the project area including means for reducing or preventing bald eagle feeding should the FWS determine that there is a contamination threat; and (5) preparation of a cultural resources management plan before implementing any changes to the existing project structures or the way the project is operated. With the exception of the bald eagle monitoring plan, Midtec has agreed to the recommended enhancement measures.

2. Developmental and Nondevelopmental Uses of the Waterway

Licensing the Midtec Project with our recommended measures would provide several benefits. The existing powerhouse would continue to provide low-cost, 25-Hertz electricity to the Midtec mill, thereby maintaining the mill's viability while continuing to provide over 1,000 jobs. Also, run-of-river operation and stream flow monitoring would continue for the term of the license. Further, licensing the project would ensure that Midtec cooperates with the RAP, contributing to long-term efforts to clean-up and/or remove toxic sediments from the Fox River. This would not only benefit aquatic organisms, but also those species that feed on them. Finally, licensing the project would bring the existing project works, which are National Register eligible as an historic district, under Federal jurisdiction and would thereby afford them the protection of Section 106, National Historic Preservation Act, for the term of the license.

Our economic analysis of the project, in the Safety and Design Assessment, concludes that the project is economically beneficial. Since no new construction is proposed, the only project costs result from actual project operation. The current cost of the project's power, according to Midtec, is about 15 mills per kWh. Alternate energy, if it were purchased, would cost Midtec about 37 mills per kWh. This energy would then have to be converted (an added cost) to 25 Hertz, to match Midtec's mill equipment. Alternate energy, if it were derived from fossil fuel sources, besides being more expensive, would contribute to atmospheric pollution and global warming. 7/

Based on our review of the agency and public comments filed on this project, and on our independent analysis pursuant to sections 4(e), 10(a)(1) and 10(a)(2) of the Act, we find that the proposed Midtec Project is best adapted to a comprehensive plan

for the proper use, conservation, and development of the Fox River and other project-related resources.

7/ The production of power via coal combustion, for example, equivalent to the power that is produced at the existing Midtec project would release about 1.85 tons of sulfur dioxide, 15.8 tons of nitrous oxides, 1.58 tons of carbon monoxide, and 9,570 tons of carbon dioxide into the atmosphere annually. Sulfur dioxide and nitrous oxide are considered significant contributors to the production of acid rain. Carbon dioxide is considered a significant contributor to global warming.

J. PRELIMINARY DETERMINATION OF CONSISTENCY WITH FISH AND WILDLIFE RECOMMENDATIONS.

Pursuant to section 10(j) of the Act, this Environmental Assessment addresses the concerns of the Federal and state fish and wildlife agencies and makes recommendations consistent with these agencies.

K. CONCLUSION

1. X Finding of No Significant Impact. Approval of the recommended alternative (see section I) would not constitute a major federal action significantly affecting the quality of the human environment; therefore, an environmental impact statement (EIS) will not be prepared.

L. LITERATURE CITED

Dunstan, T. C. 1981. Impacts on wintering bald eagles and the environment. in T. N. Ingram, ed. Proceedings of the Bald Eagle Conference on Bald Eagle Management. Apple River, Illinois. 248 pp.

Grier, J. W., B. E. Elder, F. J. Gramlich, N. F. Green, J. V. Kussman, J. E. Mathisen, and J. P. Mattsson. 1983. Northern States Bald Eagle Recovery Plan. Fish and Wildlife Service. 76 pp plus appendices.

Mead and Hunt, Inc. 1987. Wintering bald eagles case study biological assessment. Badger - Rapide Croche and Kaukauna Hydroelectric Projects on the Fox River in Outagamie County, Wisconsin. Madison, Wisconsin. 16 pp plus appendices.

Midtec Paper Corporation. 1990. Application for license for the Midtec Hydroelectric Project, a major water project, FERC No. 10674, Wisconsin. March 27, 1990.

Midtec Paper Corporation. 1990b. Applicant's response to request for additional information for the Midtec

Hydroelectric Project, a major water project, FERC No. 10674, Wisconsin. December 11, 1990.

Wisconsin Department of Natural Resources and Wisconsin Division of Health. 1987. Health advisory for people who eat sport fish from Wisconsin waters. 2 pp.

Wisconsin Department of Natural Resources. 1988. Lower Green Bay remedial action plan for the lower Fox River and lower Green Bay area of concern. Madison, Wisconsin. February 1988. 319 pp.

Wisconsin Department of Natural Resources. 1989. Lake Winnebago comprehensive management plan. Oshkosh, Wisconsin. December 1989. 82 pp.

I. LIST OF PREPARERS

Name	Position title
Vince Yearick (Coordinator)	Environmental Protection Specialist
William H.S. Diehl	Civil Engineer
R. Feller	Ecologist
J.T. Griffin	Archeologist
Ron Kokel	Fisheries Biologist
Wonkook Park	Electrical Engineer
Mary Golato	Public Utilities Specialist

SAFETY AND DESIGN ASSESSMENT
MIDTEC HYDROELECTRIC
PROJECT
FERC NO. 10674-002, WI

PROJECT DESIGN

Midtec Paper Corporation (Midtec) has applied for a major license for its constructed but unlicensed Midtec Hydroelectric Project, located on the Fox River at Cedars Lock and Dam in the Village of Kimberly, Wisconsin.

The existing project works consist of: (1) a powerhouse located at the south abutment of Cedars Dam, constructed of reinforced concrete and brick masonry, about 152 feet long, 44 feet wide, and 61 feet high; (2) powerhouse generating equipment consisting of three adjustable blade propeller turbine-generator units, each rated at 900 kilowatts (kW), 480 volts (V) and 25 Hertz (HZ); (3) powerhouse switchgear delivering the project energy at the generator voltage and frequency to the adjacent paper factory; and (4) appurtenant facilities.

The project, which has been operating essentially unchanged since about 1926, makes use of the 9.0-foot hydraulic head created by the 654-foot long, 13-foot high Cedars Dam, part of a United States-owned navigation facility, operated by the Corps of Engineers (Corps). The lock and dam complex, and the upstream navigation pool are not included in the project works. There are no external transmission facilities associated with the project.

PROJECT SAFETY

The Corps of Engineers is responsible for the safety of the Cedars Lock and Dam navigation and spillway structures. Midtec would continue to be responsible for the integrity and safety of its powerhouse.

Our Chicago Regional Office (CRO) staff inspected the project on June 14, 1988. They classified the powerhouse as an impounding structure with significant hazard potential, because of its location in a highly developed industrial area, including the downstream shoreline. The powerhouse structure appeared to be in satisfactory condition. Two noticeable cracks were observed in the vicinity of the concrete contact between the powerhouse substructure and the non-project dam. The concrete intake piers and the intake operating platform showed signs of deterioration, and there were some missing bricks in the downstream superstructure wall. None of these defects were considered public safety problems.

The project was also inspected by an independent consultant under Part 12, Subpart D of the Commission's regulations. The consultant noted the defects listed by CRO, plus other conditions inside and outside the powerhouse, that required remedial action. Midtec began implementing the consultant's recommendations in February 1990, and scheduled completion for Fall 1991. The defective conditions reported by the consultant were those typical for a 65-year-old powerhouse. They were not of a nature that would present a danger to the public.

We conclude that regular inspections, scheduled maintenance and corrective repairs, under the terms and conditions of the license, should ensure the future safety and adequacy of the project.

WATER RESOURCES PLANNING

The Fox River Basin comprises about 6,430 square miles of drainage area, emptying into Lake Michigan's Green Bay. The basin includes Lake Winnebago, a controlled natural lake of about 300 square miles, that intercepts 6,040 square miles of the drainage area, and serves as an improved natural storage reservoir. This storage improves the dependability of the river flow on the lower Fox River between Lake Winnebago and Green Bay. The long-term average flow is about 4,100 cfs.

The lower Fox River falls a total of 168 feet in a length of 39 miles. Because of the relatively steady flow, and the navigation-related dam construction, mechanical water power was developed extensively in the mid-nineteenth century. The first hydroelectric plant in the United States was constructed in 1882 at Appleton, a few miles upstream from Kimberly.

As of 1991, there are 8 operating hydroelectric plants on the lower Fox River, with a total installed capacity of about 21,000 kW. The Midtec Project is the seventh hydro plant in

upstream order from Green Bay. It has a total installed capacity of 2,700 kW, and produces average annual energy of about 8,200 megawatthours (MWh).

The Corps of Engineers commented on the application and does not oppose issuance of the license. It requires a negotiated Memorandum of Agreement (MOA) between Midtec and the Corps, to be completed and signed within six months after the date of the issuance of license. The MOA would specify the mode of operation, flow diversion and regulation requirements for operation of the Corps project. We recommend that Articles 101, 102, and 103, which were submitted by the Corps of Engineers under Section 4(E) of the act, be included in any license issued.

We discuss the comments by the Department of the Interior and the Wisconsin resource agencies in the Environmental Assessment (EA). From the hydropower perspective, the most significant recommendation is to continue the present run-of-river mode of operation, a condition that has been in effect since the project was constructed about 1926.

State and federal agencies made no other comments or recommendations addressing flood control, navigation, or irrigation requirements in the basin. There are no competing applications for the site currently pending before the Commission.

Section 10(a)(2) of the Federal Power Act requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. We identified 38 comprehensive plans that meet the requirements of the law; however none of them address various resources in relation to engineering considerations of hydroelectric development in the Fox River Basin.

After reviewing agency and public comments in this proceeding, and our independent analyses, we conclude that from a hydropower perspective, the existing Midtec Hydroelectric Project, with the recommended mitigation measures, is best adapted to the comprehensive development of the Fox River Basin.

ECONOMIC EVALUATION

The project is economically beneficial, so long as the projected levelized cost of production is less that the levelized cost of alternative energy and capacity.

Midtec proposes no new construction. Hence, the levelized project costs are only the operation and maintenance costs, and administrative and general expenses. According to Midtec, these costs total about 15 mills per kWh at the present time. We estimate that these costs will increase at the rate of about 4 percent per year for the next few years.

Alternative capacity and energy would have to be delivered

at a frequency of 25 HZ. The capital cost of conversion equipment would be expensive, and unconverted energy at 60 HZ presently costs about 37 mills per kWh in the project vicinity. We expect alternative energy to increase in cost at the rate of at least 4 percent per year.

We conclude that the existing Midtec Hydroelectric Project would continue to be economically beneficial.

EXHIBITS

The following portions of exhibit A and the following exhibit F drawings conform to the Commission's rules and regulations and should be included in any license issued.

Exhibit A:

Pages 10 and 11 of exhibit A, describing the proposed mechanical, electrical and transmission equipment, filed on March 27, 1990 with the application for license.

Exhibit F Drawing	FERC No.	Description
Sheet 1	10674-1	Powerhouse Floor Plan
Sheet 2	10674-2	Powerhouse Section on Center Line
Sheet 3	10674-3	Powerhouse Section on Offset Line

PREPARERS

William H. S. Diehl, Civil Engineer
Won Park, Electrical Engineer

Document Content(s)