

5.31.78

DATA SHEET

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY -- NOMINATION FORM**

FOR FEDERAL PROPERTIES

FOR NPS USE ONLY

RECEIVED MAY 24 1976

DATE ENTERED OCT 19 1978

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*  
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

**1 NAME**

HISTORIC

Keokuk Lock and Dam

AND/OR COMMON

Lock and Dam Number 19

**LOCATION**

STREET & NUMBER

AT MISSISSIPPI RIVER

CITY, TOWN

Keokuk

— NOT FOR PUBLICATION

CONGRESSIONAL DISTRICT

1

STATE

Iowa

— VICINITY OF  
CODE

COUNTY

Lee

CODE

**CLASSIFICATION**

CATEGORY	OWNERSHIP	STATUS	PRESENT USE
<input type="checkbox"/> DISTRICT	<input type="checkbox"/> PUBLIC	<input checked="" type="checkbox"/> OCCUPIED	<input type="checkbox"/> AGRICULTURE <input type="checkbox"/> MUSEUM
<input type="checkbox"/> BUILDING(S)	<input type="checkbox"/> PRIVATE	<input type="checkbox"/> UNOCCUPIED	<input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> PARK
<input checked="" type="checkbox"/> STRUCTURE	<input checked="" type="checkbox"/> BOTH	<input type="checkbox"/> WORK IN PROGRESS	<input type="checkbox"/> EDUCATIONAL <input type="checkbox"/> PRIVATE RESIDENCE
<input type="checkbox"/> SITE	<b>PUBLIC ACQUISITION</b>	<b>ACCESSIBLE</b>	<input type="checkbox"/> ENTERTAINMENT <input type="checkbox"/> RELIGIOUS
<input type="checkbox"/> OBJECT	<input type="checkbox"/> IN PROCESS	<input checked="" type="checkbox"/> YES: RESTRICTED	<input checked="" type="checkbox"/> GOVERNMENT <input type="checkbox"/> SCIENTIFIC
	<input type="checkbox"/> BEING CONSIDERED	<input type="checkbox"/> YES: UNRESTRICTED	<input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> TRANSPORTATION
		<input type="checkbox"/> NO	<input type="checkbox"/> MILITARY <input type="checkbox"/> OTHER:

**AGENCY**

REGIONAL HEADQUARTERS: (If applicable)

U.S. Army Corps of Engineers, Rock Island District

STREET & NUMBER

Clock Tower Building

CITY, TOWN

Rock Island

STATE

Illinois

— VICINITY OF

**LOCATION OF LEGAL DESCRIPTION**

COURTHOUSE,  
REGISTRY OF DEEDS, ETC.

Lee County Court House, Office of the Recorder of Deeds

STREET & NUMBER

CITY, TOWN

Fort Madison

STATE

Iowa

**6 REPRESENTATION IN EXISTING SURVEYS**

TITLE

None

DATE

— FEDERAL — STATE — COUNTY — LOCAL

DEPOSITORY FOR  
SURVEY RECORDS

CITY, TOWN

STATE

Incl 1

# 7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input checked="" type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input checked="" type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

Lock and Dam 19, originally known as the Keokuk Lock and Dam, consists of a 9/10 mile concrete dam of 119 arches spanning the Mississippi River, a 900 foot powerhouse with 15 lowhead turbines, a 110 x 400 foot lock and a 150 x 463 foot drydock, all completed in 1914. In 1957 a new 110 x 1200 foot lock was built between the drydock and the Iowa shore and the original lock taken out of service.

The major structures included in this nomination - the dam and powerhouse, the old lock, and the drydock - are in original condition with no major modifications to the basic concrete structures. However, the machinery associated with the various structures has been updated and replaced as necessary to keep the dam, powerhouse, and drydock in operating condition.

Although Lock and Dam 19 flooded out the Des Moines Rapids Canal (1877) a portion of the lower lock is still visible between the old lock and the wall of the new lock and now has a gauge station on top of it.

# 8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input checked="" type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input type="checkbox"/> 1800-1899	<input checked="" type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input checked="" type="checkbox"/> TRANSPORTATION
<input type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES 1914

BUILDER/ARCHITECT Keokuk and Hamilton Water Power Co.

## STATEMENT OF SIGNIFICANCE

Lock and Dam No. 19 represents the most recent in a long series of attempts to improve navigation on the Mississippi River between Keokuk and Montrose, a stretch once known as the Des Moines Rapids. These rapids, and the Rock Island Rapids, were the two most serious hazards to navigation on the Upper Mississippi River during the nineteenth century. Each year, prior to 1877, numerous steamboats were wrecked and dozens damaged or grounded on the numerous ledges of rock which formed the Des Moines Rapids. During low water the rapids were especially dangerous.

The need to improve the rapids and their potential for the development of water power were first articulated by Lieut. Robert E. Lee (later Commander-in-Chief of the Armies of the Confederate States of America) in 1832, in a report to the War Department. Five years later Lee supervised the first of many costly efforts during the next thirty years to blast a channel through the ledges forming the rapids. By 1867 the channel blasting had proved unsuccessful and work was begun on a 7.6 mile canal along the Iowa shore, with three locks, to bypass the rapids. It was this project which led to the formation of the Rock Island District of the Army Corps of Engineers.

The Des Moines Rapids Canal was finally completed in 1877 at a cost of \$4.1 million eliminating the frequent need to transship passengers and cargo around the rapids by wagon at low water. Traffic reached its peak in 1883, when 1,107 steamboats passed through the canal. In its day the canal was considered a major engineering feat.

In 1905 the Keokuk and Hamilton Water Power Company (now the Union Electric Company) was granted the authority to build a dam and powerhouse at Keokuk. The charter also included the requirement that the power company build a new lock and drydock to replace the Des Moines Rapids Canal which would be flooded by the new dam. At the time it was completed in 1914 the Lock and Dam represented a major accomplishment. The dam is nearly a mile long; second in size only to the British dam across the Nile River. The powerhouse was the second largest hydro-electric station in the world - second only to the combined stations at Niagara Falls - and the largest lowhead hydro-electric station in the world. The lock had (and still has) a greater lift (38 ft.) than any other lock on the Mississippi River.

In 1930 when the nine foot channel project was authorized by Congress the Keokuk Lock and Dam was integrated into the project and designated Lock and Dam 19. With the increase in towboat traffic after the second war the original lock proved too small and too slow and a larger lock was authorized. It was completed in 1957.

# 9 MAJOR BIBLIOGRAPHICAL REFERENCES

Information on file at the Rock Island District Offices.  
 Keokuk and Hamilton Water Power Company, Prospectus containing data and information concerning the proposed dam across the Mississippi River to develop electric power at the foot of the Des Moines Rapids, Keokuk(?), Keokuk and Hamilton Water Power Company, 1905.  
 Nelson, C. Roberts, and Moorhead, S. W., Eds., Story of Lee County, Iowa, Chicago, 1914

# 10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 5

UTM REFERENCES

BA	15	637 638840	4472475	CA	15	638119	4473260
	ZONE	EASTING	NORTHING		ZONE	EASTING	NORTHING
AA	15	639790	4473105	D			

VERBAL BOUNDARY DESCRIPTION

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
Iowa		Lee	
STATE	CODE	COUNTY	CODE
Illinois		Hancock	

# 11 FORM PREPARED BY

NAME / TITLE

Larry McLean, Engineering Technician

ORGANIZATION

Corps of Engineers

DATE

23-Mar-76

STREET & NUMBER

Clock Tower Building

TELEPHONE

788-6361

CITY OR TOWN

Rock Island

STATE

Illinois

# 12 CERTIFICATION OF NOMINATION

STATE HISTORIC PRESERVATION OFFICER RECOMMENDATION

YES

NO

NONE

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

In compliance with Executive Order 11593, I hereby nominate this property to the National Register, certifying that the State Historic Preservation Officer has been allowed 90 days in which to prepare the nomination to the State Review Board and to evaluate its significance. The evaluated level of significance is National State  Local

FEDERAL REPRESENTATIVE SIGNATURE

TITLE

DATE 4-22-76

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

10/19/78

ATTEST:

KEEPER OF THE NATIONAL REGISTER

KEEPER OF THE NATIONAL REGISTER

DATE

10/16/78

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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RECEIVED	MAY 31 1978
DATE ENTERED	OCT 19 1978

CONTINUATION SHEET

ITEM NUMBER 1

PAGE 1

1. The Hamilton, Illinois, transmission substation provides transmission line connections between the Keokuk power plant and the Nauvoo, Niota and Dallas City areas in Illinois, as well as the Fort Madison and Burlington areas in Iowa, including an interconnection with Iowa Southern Utilities. There are also connections south to Quincy, Illinois (interconnection with Central Illinois Public Service Company), Hannibal, Missouri, and the St. Louis, Missouri Union Electric Company system. The original construction of this substation was completed in 1948; however, there have been some later additions.

The Hamilton, Illinois distribution substation is supplied from the Keokuk power plant and provides service to small businesses and residential customers in the Hamilton and Warsaw, Illinois, areas. This was originally constructed as a 25 Hz substation in 1913 and was replaced by the present 60 Hz distribution substation which was completed in 1950.

2. The last concrete for the Keokuk dam (ceremonial bucket) was poured on 31 May 1913.

3. The Keokuk Plant superstructure was essentially complete in March 1913.

4. Installation of the fifteen (15) main units, two (2) house service units and the necessary auxiliary equipment was fundamentally complete on 24 July 1913; however, the last generator did not operate until 31 January 1914. The original installation produced only 25 Hz generation; however, six (6) units were rewound to produce 60 Hz generation during the years 1943-1954. The 25 Hz machines generate power at 11,000 volts for local distribution to industrial customers and transformer<sup>s</sup> step this voltage up to 110,000 volts for transmission between Keokuk, Iowa, and St. Louis, Missouri. The 60 Hz units generate energy at 13,800 volts for local distribution and this voltage is stepped up to 69,000 volts for transmission purposes.

The equipment was designed for a 32-foot head and, under optimum head conditions, the main units generate 9,000 kilowatts each and contribute a maximum of 135,000 kilowatts to the Union Electric system. The two house service units generate station power at 460 volts and have a capacity of 1,600 kilowatts each.

Our records further indicate that the navigation lock was completed and first used on 12 June 1913.

KEOKUK, IOWA—MO.—ILL.

NW/4 KEOKUK 15' QUADRANGLE  
N4022.5—W9122.5/7.5

1964

AMS 2764 IV NW—SERIES V863

HAMILTON, ILL.—IOWA

NE/4 KEOKUK 15' QUADRANGLE  
N4022.5—W9115/7.5

1964

AMS 2764 IV NE—SERIES V863

Lock and Dam 19

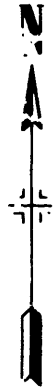
Keokuk, Iowa

UTM references

A: 15/638840/4472475

B: 15/638119/4473260

C: 15/639790/4473105

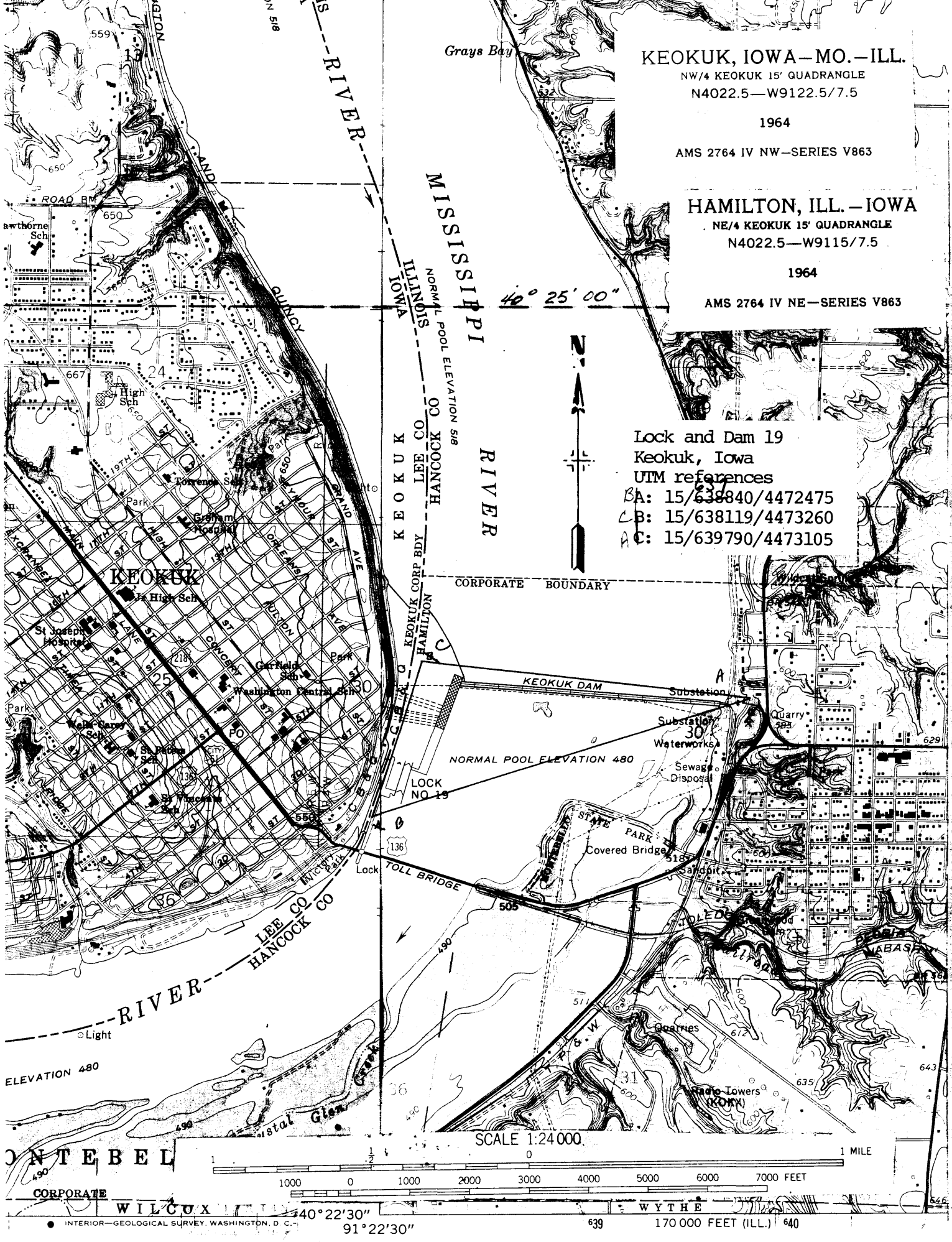
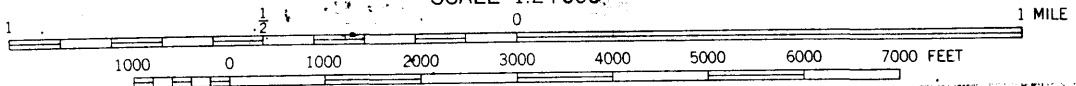


CORPORATE BOUNDARY

NORMAL POOL ELEVATION 480

LOCK NO 19

SCALE 1:24 000



WILCOX 40° 22' 30" 91° 22' 30" 639 170 000 FEET (ILL.) 640