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Quad Cities Nuclear Power Station
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Cordova, IL 61242-9740

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PM-05-001

January 13, 2005

Illinois Department of Natural Resources
Office of Resource Conservation and
Attn: Glen Kruse
One Natural Resources Way
Springfield, IL 62702-1271



Subject: Application for Incidental Take Authorization for Exelon Generation Co,
LLC, Quad Cities Nuclear Power Station.

Dear Sirs:

Attached is an Application for Incidental Take Authorization pursuant to the requirements specified in the Illinois Administrative Code for Incidental Taking of an Endangered or Threatened Species (17 IAC 1080). Exelon is requesting the Incidental Take Authorization in response to concerns the IDNR Office of Reality and Environmental Planning expressed with a Joint Dredging Permit Application submitted to the IDNR, Rock Island District USACE, and IEPA on October 22, 2004.

Also attached for your review is a copy of the public notice Exelon Quad Cities Station plans to run in a local newspaper per section 1080.20.

If you should have any questions concerning this matter, please contact Larry LaJeone at (309) 227-2867 or Mark Stuhlman at (309) 227-2765.

Sincerely,

William R. Gideon
Plant Manager
Quad Cities Station

WRG/MS/jas

Attachments

cc: John Petro, NGG Environmental
Mark Stuhlman, Quad Cities
Larry LaJeone, Quad Cities
Letterbook



**Application for
Incidental Take Authorization**

Quad Cities Nuclear Power Station
Mississippi River
Rock Island County, Illinois

Exelon Generation Company, LLC
Quad Cities Nuclear Power Station
Cordova, Illinois

January 2005

Table of Contents

Executive Summary.....	i
Purpose.....	i
Project Description.....	i
Project Permit History.....	ii
Project Schedule.....	ii
Section 1 – Description of Potential Impacts.....	1-1
Legal Description.....	1-1
Biological Data.....	1-1
Site Activities.....	1-2
Section 2 – Minimization of Impacts.....	2-1
Minimizing Affected Area.....	2-1
Continued Future Use.....	2-1
Minimizing Effects of Proposed Action.....	2-1
Habitat for Mussels.....	2-1
Post-Project Monitoring.....	2-1
Management of Change.....	2-2
Verification of Funding.....	2-2
Section 3 – Alternative Actions.....	3-1
Section 4 – Likelihood of Survival of T & E Species.....	4-1
Section 5 – Implementing Agreement.....	5-1
Appendix A – Maps of Project Location and Affected Area.....	A-1
Appendix B – Biological Data on Mussel Community.....	B-1
Appendix C – Maintenance Dredging Permit, 1995-2004.....	C-1

Executive Summary

Purpose

This application is submitted by Exelon Generation Company (Exelon), on behalf of Quad Cities Nuclear Power Station, to the Illinois Department of Natural Resources pursuant to the requirements specified in the Illinois Administrative Code for Incidental Taking of an Endangered or Threatened Species (17 IAC 1080). Section 1080.10(a) states that "Incidental taking of endangered and threatened species shall be authorized by the Department of Natural Resources (Department) only if the applicant submits to the Department a conservation plan that satisfies all criteria established in this Part".

In order to proceed with the project as described herein, Exelon requests approval for the incidental taking of the state-listed threatened mussel, the butterfly (*Ellipsaria lineolata*). This action has been developed under the guidance of the Illinois DNR, Office of Realty and Environmental Planning and the Division of Habitat Resources.

Project Description

Hydraulically dredge accumulated silt out of generating station's existing Intake Forebay, as well as an adjacent section of Mississippi River measuring 400 feet by 700 feet in front of the intake forebay (as shown on the attached drawings - Appendix A) down to an approximate elevation of 557 feet, mean sea level. It is estimated that approximately 40,000 cubic yards of material will be removed. The station's recently expired dredging permit (CENCR-OD-S-297290 - expiration 12/31/2004 - Appendix C) allows dredging of an area 130 feet by 214 feet in front of the station's intake bay. This area is being expanded due to the amount of silt that has built up over the years between the station's intake forebay, the river's main channel, and the Edison Pier located just North of the plant. At low water levels, there currently are areas between the intake forebay and main channel that are <1 feet of water. The dredging is necessary to maintain essential cooling water flow to the station's condensers, thereby allowing continued generation of electricity.

The dredged material will be pumped into existing IEPA permitted sedimentation ponds located on station property (permit # 2002-EA-5001 - expiration 12/31/2006 - Attachment 2). These sedimentation ponds presently have sufficient available capacity to hold more material than is expected to be dredged during the above-described operation. The dredged material will remain in this area until the water evaporates or filters away naturally.

This described dredging of the intake forebay and adjacent section of Mississippi River will be performed as a maintenance activity, when deemed necessary, in order to ensure that adequate cooling water flow is maintained.

Project Permit History

November 25, 1985 - Rock Island District, Corps of Engineers issued Dredging Permit NCROD-S-070-0x6-1-134970 to Commonwealth Edison Co Quad Cities Station. Permit authorizes dredging of station intake channel as well as adjacent area in front of intake 220' wide extending 130' into the main river down to an elevation of 557'.

1986 – (month uncertain) Approx 12,000 cubic yards of material hydraulically dredged from intake bay and adjacent area in front of intake.

May 1994 – Approx. 11,050 cubic yards of material hydraulically dredged from intake bay and adjacent area in front of intake.

April 14, 1995 - Rock Island District, Corps of Engineers issued Dredging Permit CENCR-OD-S-297290 to Commonwealth Edison Co Quad Cities Generating Station. Permit authorizes dredging of station intake channel as well as adjacent area in front of intake 214' wide extending 130' into the main river down to an elevation of 557'. Replaces previous permit NCROD-S-070-0x6-1-134970 that expired 12/31/1994.

May 1998 - Approx. 15,000 cubic yards of material hydraulically dredged from intake bay and adjacent area in front of intake.

April 2002 - Approx. 13,000 cubic yards of material hydraulically dredged from intake bay and adjacent area in front of intake.

October 22, 2004 – Joint Maintenance Dredging Permit Application submitted to Rock Island US Army Corps of Engineers, Illinois Dept. Natural Resources (IDNR), and Illinois Environmental Protection Agency (IEPA). Permit application requests that the adjacent area in front of the station's intake be expanded from 214' by 130' to 700' by 400'.

October 26, 2004 – Notified by IDNR that dredging project is covered by IDNR, Office of Water Resources Statewide Permit No. 11 – Minor Maintenance Dredging Activities.

December 9, 2004 – Notified by IEPA that proposed dredging project may be completed without causing water pollution as defined in the Illinois Environmental Act.

December 9, 2004 – Notified by IDNR that IDNR had requested Rock Island District USACE hold dredging permit in abeyance pending Exelon Quad Cities Station consultation with IDNR due to possible incidental taking of listed species (*Ellipsaria lineolata* – butterfly mussel) during proposed project.

December 13 - 15, 2004 – Phone conversations held between Larry LaJeone (Exelon Quad Cities Biologist), Mark Stuhlman (Exelon Quad Cities Environmental Analyst), Robert Schanzle (IDNR Permit Program Manager), and Glen Kruse (IDNR Aquatic

Endangered Species Program Manager). Larry LaJeone informs IDNR personnel that Quad Cities Station intends to submit an Application for Incidental Taking of Endangered or Threatened Species Authorization pursuant to Section 10/5.5 of the Act and procedures contained in Title 17, Part 1080.

Project Schedule

It is Quad Cities Station desire to perform dredging prior to ambient river temperatures approaching temperatures which require starting of the fifth and sixth circulating water pumps (additional flow requirement of 314,000 gpm) which usually occurs in the early-April timeframe and before high water levels due to spring runoff (April-May). Application is for a 10-year maintenance dredging permit. First dredging is scheduled for early March 2005 and is anticipated to last 1-2 weeks. Maintenance dredging would then be performed as needed over the life of the permit, which is expected to occur two to three times over the life of the 10-year maintenance permit or approximately every 5 years.

Section 1 – Description of Potential Impacts

Legal Description

The proposed project is located in Sections SE:NE 7:18, Township 20 North, and Range 2 East, 3 miles North of Cordova, Rock Island County, Illinois, on the East bank of the Mississippi River at approximate Mississippi River Mile 506.7.

Biological Data

Exelon is keenly aware of the sensitivity toward threatened and endangered mussels, particularly in Pool 14. The prominent mussel bed that extends upstream from Cordova, Illinois (RM 303-305.5) along the Illinois bank has been identified as an “essential habitat area” for the recovery of the federally endangered *Lampsilis higginsii*. Their nearby presence plays an important consideration in many of the Quad Cities Power Station’s decisions.

With respect to this project, Exelon reviewed three sources of information specific to the proposed dredge area that describe mussels present in the vicinity as well as directly in the area to be dredged. These sources include two surveys commissioned by Exelon (then Commonwealth Edison) in 1976 (Lewis and Brice, 1977) and 1985 (LaJeone, 1985), and a recent survey conducted by the Illinois DNR in July 2002. Information on the status and distribution of the butterfly (*Ellipsaria lineolata*), a state-listed threatened species, was obtained from the Illinois Natural History Survey website, www.inhs.uiuc.edu/cbd/. All of these documents are provided in Appendix B of this Application.

The reason for this Application is the occurrence of one live butterfly mussel in qualitative samples collected by IDNR in July 2002. During that survey modest numbers of unionid mussels (3-5/m²) were collected at only one of three locations, an area of deeper water with firm gravel substrate downstream from the southern boundary of the proposed project area. At that location, the butterfly mussel represented only 2.8% of all mussels collected. The quantitative mussel survey performed in 1985 within the present dredging area found mussel density was 2.00/m², with the Asiatic clam (*Corbicula leana*) comprising 50% of all mussels collected and no threatened or endangered species present. These densities are considerably less than those reported from quadrat samples taken in 1976, which ranged from 18.4/m² to 122.4/m².

Substrates within the proposed dredge area are comprised primarily of loose sand with some silt and gravel, which are not conducive to unionid colonization. Sedimentation has occurred rapidly within the last two years, with much of the proposed dredge area less than one foot in depth at low river flows. In fact, two of the locations sampled by IDNR in 2002 have become so shallow that they are not accessible by boat at low river flows.

Only a small portion of the proposed dredge area may be capable of supporting the butterfly mussel, that being in deeper water along the project's western boundary. The majority of dredging will be done in shallow water areas nearer to the Station's intake. Potential impacts to butterfly mussels are expected to be minimal because of this species' preference for deeper water with higher current velocity. Butterfly mussels are reported as widespread but only locally abundant, occurring in the Upper Mississippi, Ohio and Wabash Rivers. Given the breadth of their distribution, it is reasonable to suspect that the incidental take of a few individuals will not pose a threat to the butterfly mussel's continued existence in Illinois or Pool 14 of the Mississippi River.

Site Activities

Dredging activities include mobilization and demobilization of the dredge and pipeline to the site and the assembly and disassembly of pipeline. The pipeline will extend approximately 1 mile from the area to be dredged to the site permitted settling ponds. The dredge will operate 24 hours per day, and will hydraulically pump dredged material through the pipeline to the settling ponds.

Section 2 – Minimization of Impacts

Minimizing Affected Area

The proposed dredge area provides for the minimal amount of disturbance while affording essential cooling water flow to the Station's condensers. Limiting the western and southern boundaries of the project area ensures connectivity with the main channel border, non-depositional portion of the river with minimal intrusion into potentially productive mussel habitat.

Continued Future Use

The initial removal of sediments from the project area by hydraulic dredging will remove sessile organisms from area. However, deepening by removal of loose sand and silt will expose more suitable substrates and restore flow to areas that are now stagnant. Post-dredging conditions may be more favorable for mussel colonization than current conditions. It is anticipated that a broader mussel assemblage could repopulate the dredge area through natural mechanisms.

Minimizing Effects of Proposed Action

Hydraulic dredging of sediment from the project area will have its greatest effect when the first few inches of sediment are removed. Minimizing the effects of this dredging project are achieved by removing a sufficient volume of underlying sediments such that the need for further maintenance dredging extends over the course several years (5 to 6 years), rather than having to re-dredge the area at shorter intervals (2 to 3 years).

Habitat for Mussels

In its present condition, the substrate composition and hydrology of the project area do not represent suitable mussel habitat. Low mussel densities observed during field surveys support this observation. Far more suitable mussel habitat exists at known locations both upstream and downstream from Quad Cities Nuclear Station.

Post-Project Monitoring

Inasmuch as the proposed dredge area does not presently support even a modest mussel population, no post-project monitoring is anticipated.

Management of Change

The Environmental Management System (EMS) is the Exelon Nuclear management structure, conforming to the Exelon Corporate Environmental Policy. The EMS enables Exelon Nuclear continuous planning, execution, checking, and review of business aspects that have environmental impacts. Specific to this project, any spoil material dredged will not be returned to the waterway but will be deposited in a self-contained area in compliance with all state statutes, regulations and permit requirements with no discharge to waters of the state. Any areas affected by construction of pipeline shall be mulched and seeded as soon after construction as possible to prevent runoff into the Mississippi River. Periodic inspections during the project are scheduled to ensure compliance with all permit requirements.

Verification of Funding

It is estimated that the dredging project and any post construction mulching / seeding will cost approximately \$250,000. Exelon Generation has sufficient cash assets to ensure these activities will be adequately funded.

Section 3 – Alternative Actions

The proposed dredging project is due to the amount of silt that has built up over the years between the station's intake forebay, the river's main channel, and the Edison Pier located just North of the plant. With the current silt levels, potential concerns exist that during low water level events, sufficient cooling water flow may not be available to ensure continued generation of electricity. Therefore a "no action" alternative is not an option.

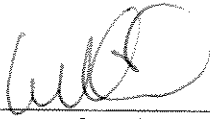
The silting that is restricting the flow to the intake is outside the 214' by 130' dredge area allowed by previous dredge permits. Therefore reducing the expanded area back to the previous permitted size area is not an option. The rate of silt build up has increased over the last few years. This is due to the low flow conditions experienced behind the Edison Pier to the North of the intake. Increasing the amount of silt removed from the area adjacent to the intake channel will extend the frequency that maintenance dredging is required from every 2-3 years to every 5-6 years.

Section 4 – Likelihood of Survival of T & E Species

The continued survival of state-listed threatened and endangered species in Pool 14 of the Mississippi River will not be adversely affected by project dredging activities. The area encompassed by the project represents an extremely small portion of available habitat within the pool and consists of habitat that is not integral for the survival of any state-listed threatened or endangered species. The only state-listed threatened species known to inhabit the project area is the butterfly mussel. Far higher quality mussel habitat exists in several other known areas within Pool 14, such that the few individuals that may be incidentally taken through dredging activities will not measurably affect the continued survival of the butterfly mussel in Pool 14 or throughout the Upper Mississippi River bordering Illinois.

Section 5 – Implementing Agreement

Application is hereby made for authorizations for the activities described herein. I certify that I am familiar with information contained in the application, and that I possess the authority to undertake the proposed activities. I further certify that to the best of my knowledge and belief, such information is true, complete, and accurate and that the proposed actions, including those described in the conservation plan herein, will be executed in compliance with all other pertinent federal, state, and local regulations. No other final federal authorizations for a taking have been issued to Exelon Quad Cities Generating Station.



(Signature of Applicant or Authorized Agent)



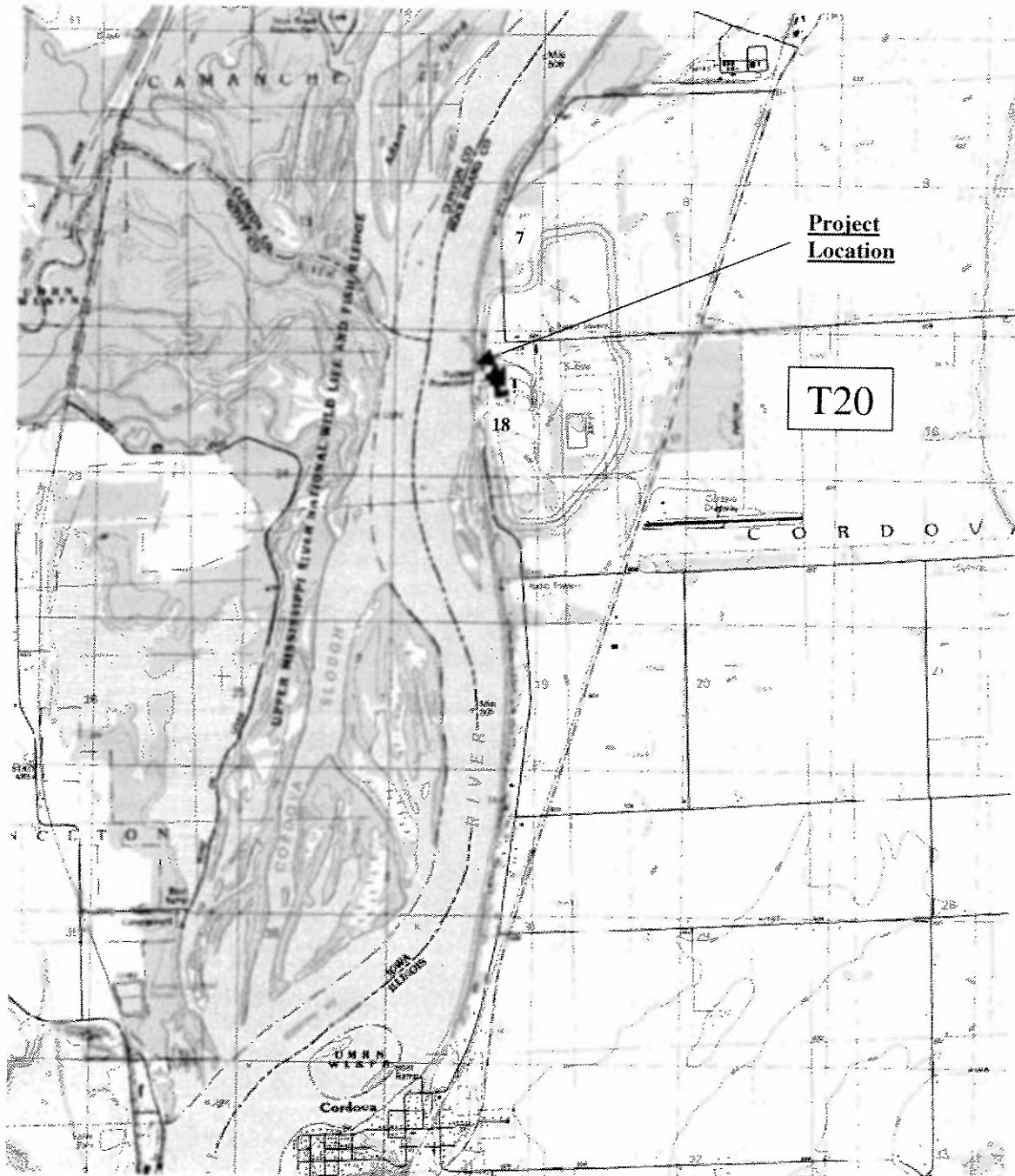
(Date)

William R. Gideon, Plant Manager – Quad Cities Nuclear Power Station
(Name of Applicant or Authorized Agent)

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Quad Cities Nuclear Power Station
Mississippi River
Rock Island County, Illinois

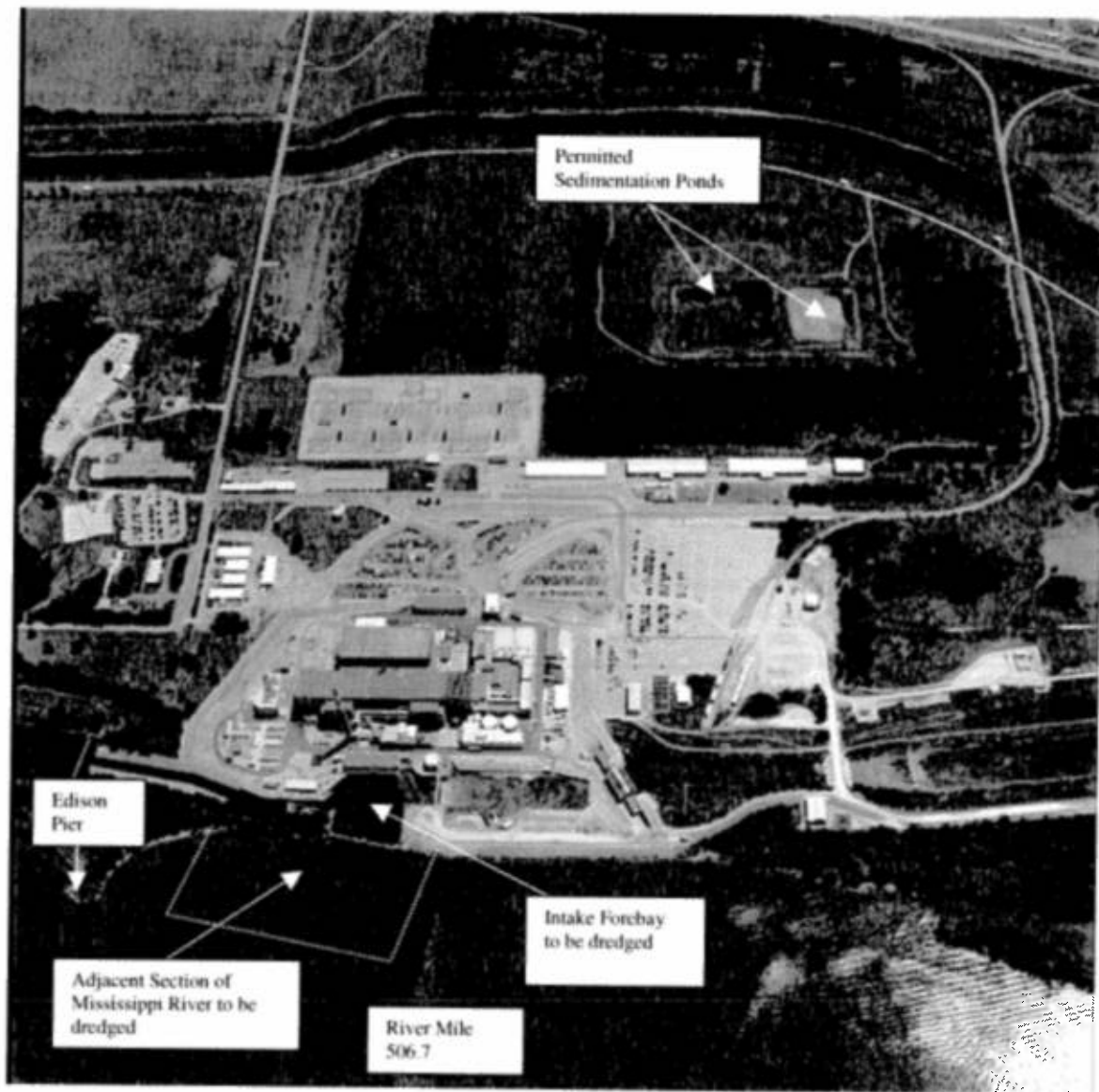
Appendix A – Maps of Project Location and Affected Area



VICINITY MAP #1

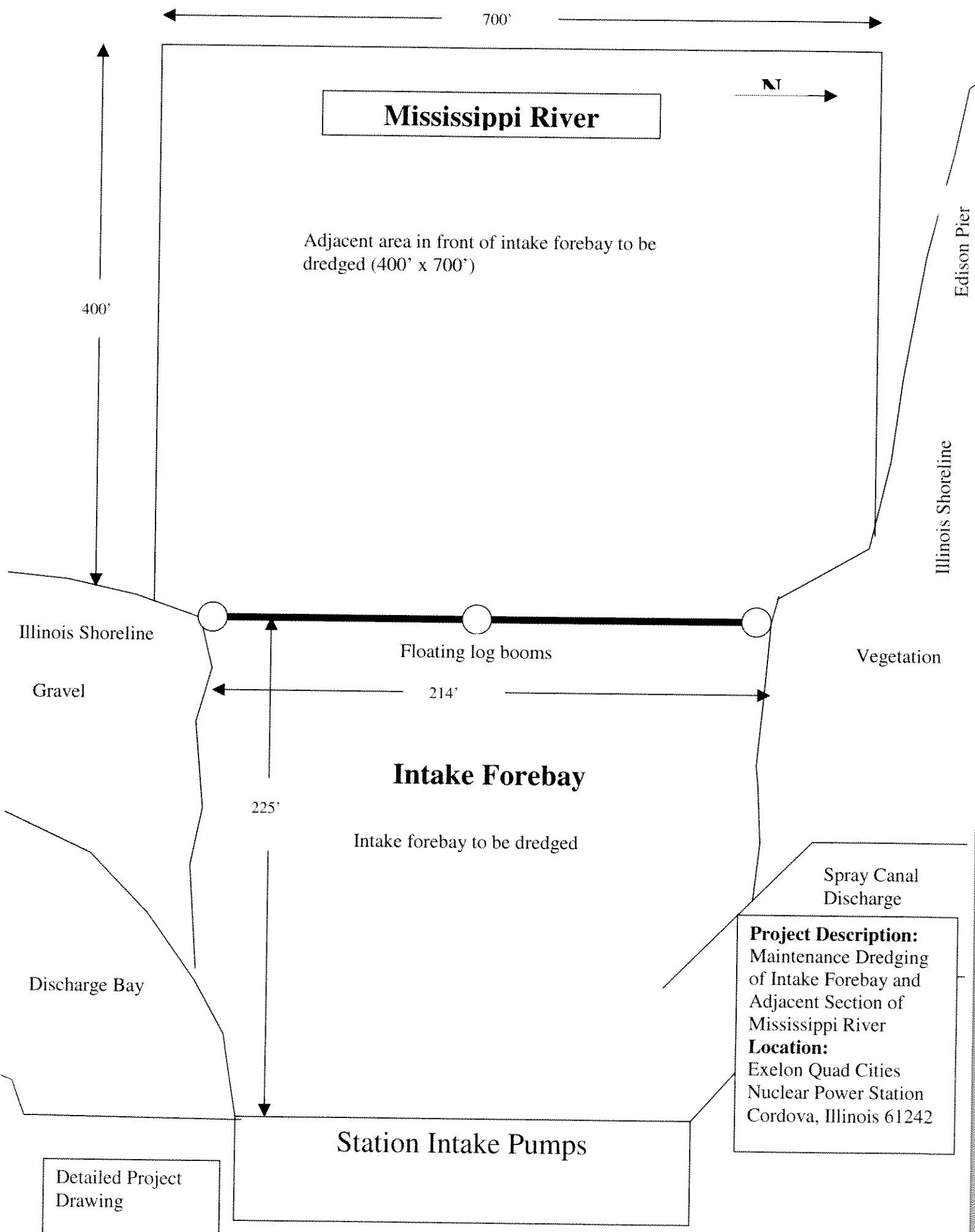
Cordova Quadrangle

Project Description:
 Maintenance Dredging
 of Intake Forebay and
 Adjacent Section of
 Mississippi River
Location:
 Exelon Quad Cities
 Nuclear Power Station
 Cordova, Illinois 61242



Vicinity Map #2

Project Description:
Maintenance Dredging of Intake Forebay and Adjacent Section of Mississippi River
Location:
Exelon Quad Cities Nuclear Power Station
Cordova, Illinois 61242



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Quad Cities Nuclear Power Station
Mississippi River
Rock Island County, Illinois

Appendix B – Biological Data on Mussel Community

NALCO ENVIRONMENTAL SCIENCES

Chapter 10

FRESHWATER MUSSEL SURVEY

By

Randall B. Lewis and James R. Brice

OPERATION ENVIRONMENTAL MONITORING
IN THE MISSISSIPPI RIVER NEAR QUAD-CITIES STATION
February 1976 - January 1977

NALCO ENVIRONMENTAL SCIENCES

TABLE OF CONTENTS

	<u>Page</u>
List of Figures	537
List of Tables	539
I. Introduction	541
II. Field and Analytical Procedures	542
III. Results and Discussion	542
IV. Conclusions	550
V. References Cited	552