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November 28, 2011

Mr. Mark Harris
Florida Department of Environmental Protection
Industrial Wastewater Section, Mail Station 3545
2600 Blair Stone Road
Tallahassee, Florida 32399

OVERNIGHT MAIL

**RE: Gulf Power Company
Scholz Electric Generating Plant – Jackson County
NPDES Permit #FL0002267
Conditions I.A.11**

Dear Mr. Harris:

Conditions I.A.11 of the above-referenced permit require Gulf Power to “develop a plan...to help return live fish, shellfish and other aquatic organisms collected or trapped on the intake screens to their natural habitat” and “to submit the plan...within 12 months of the effective date of this permit.” Gulf Power received an extension from the Department to allow submittal of the plan by December 1, 2011.

Gulf Power has finalized and attached the plan for the Department’s review in compliance with Conditions I.A.11.

If you have any questions regarding this information, please feel free to call Ms. Susan Kennedy at (850) 444-6153.

Sincerely,

James O. Vick
Environmental Affairs

Enclosure

Cc: Bill Armstrong, P.E., DEP Pensacola
Kevin Ledbetter, DEP Tallahassee
Chris Miller, Gulf Power
Kenny Peacock, Gulf Power
Melinda Scanlon, Gulf Power
Marie Largilliere, Gulf Power
Roger Danley, Gulf Power
Mike Markey, Gulf Power
Joe Neese, Gulf Power

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Plant Scholz Aquatic Life Avoidance Feasibility Study Work Plan

Submitted to:



Prepared by:

MACTEC Engineering and Consulting, Inc.



Judith L. Dudley

Judith L. Dudley, PhD
Principal Scientist

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Project Scientist

November 2011

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1.0 INTRODUCTION

This plan will evaluate the feasibility of potential improvements for aquatic life avoidance systems at the cooling water intake structure (CWIS) for the Plant Scholz power plant in accordance with National Pollutant Discharge Elimination System (NPDES) Permit Number: FL0002283. This plan will evaluate alternatives to help return live fish, shellfish, and other aquatic organisms collected or trapped on the intake screens to their natural habitat.

Power plants and other types of industrial facilities that withdraw large volumes of water from rivers, streams, lakes, estuaries, oceans, or other waters of the United States for cooling purposes are regulated by the United States Environmental Protection Agency (USEPA) under the Federal Clean Water Act (CWA). Section 316(b) of the CWA requires USEPA to ensure that the location, design, construction and capacity of CWISs reflect the Best Technology Available (BTA) for minimizing adverse environmental impacts. Potential impacts associated with impingement of aquatic biota on the CWIS have been characterized for Plant Scholz (MACTEC 2009). In accordance with the Plant's NPDES Permit condition VI.3, a plan to evaluate the feasibility of minimizing aquatic impacts must be submitted. The proposed feasibility study will identify and analyze the BTAs, make economic, biologic, and engineering efficacy comparisons, and ultimately recommend a course of feasible action, subsequent to plan approval.

2.0 BACKGROUND

Plant Scholz is located on the Apalachicola River 3.5 miles downstream of the Jim Woodruff Lock and Dam near Chattahoochee, Florida and 2.3 miles south of US Highway 90 (Figure 1). The plant is located at approximately latitude 30° 40' 12.45"N, and longitude 84° 53' 14.68"W. The site is located on the west bank of the Apalachicola River in the upper river corridor from Chattahoochee to Blountstown. The river is a freshwater river in the area of the Plant location.

Plant Scholz began operation in 1953. Plant Scholz operates as a peaking plant and has a 98 megawatt (MW) capacity and a once-through cooling system. Water is withdrawn from the Apalachicola River and pumped to the condenser and then back out to the river. The condenser is a horizontal, two pass-divided water box arrangement with a condensing surface area of 32,500 square feet.

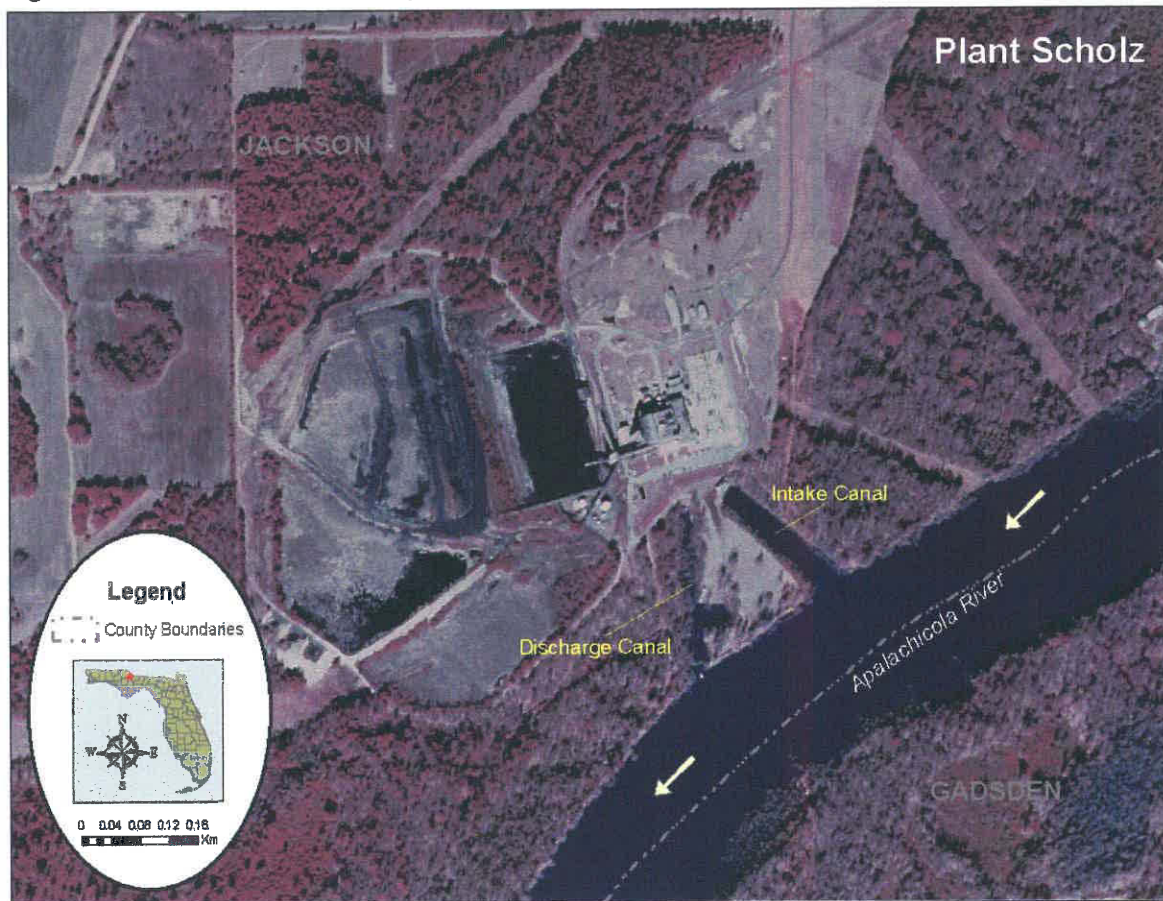
The Plant's intake is angled slightly upstream and consists of an approximately 600 foot long, narrow canal cut between the Plant and the swiftly moving Apalachicola River. The canal is seven feet deep with 2.5:1 slopes and a bottom width of approximately 30 feet at an elevation of 35 feet mean sea level (MSL).

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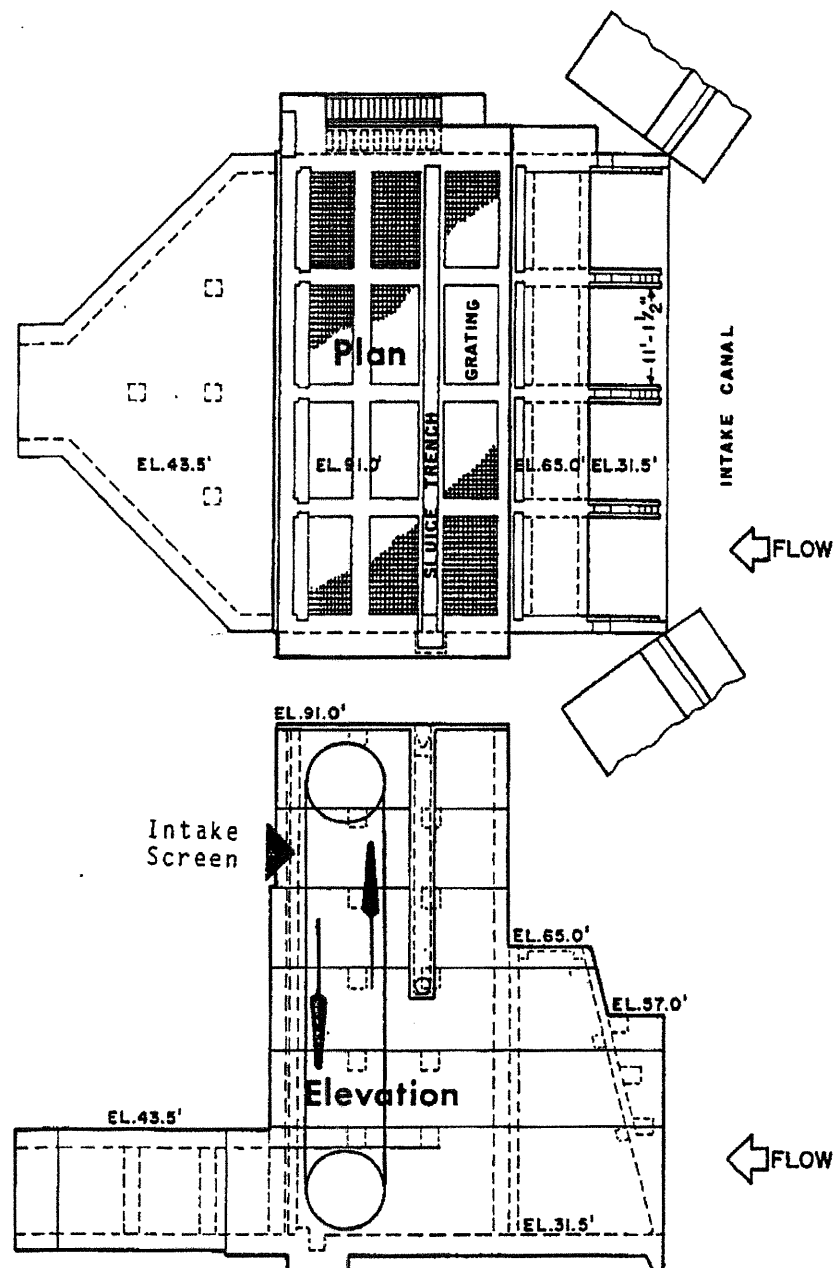
Figure 1. Aerial Photo Showing Plant Scholz Location



The CWIS is located at the end of the intake canal and is approximately 54 feet wide with a trash rack in each of the four bays. The trash rack has 5/16 inch wide by 3.5 inch thick steel bars with 4 inch spacing and 3-11/16 inch clear openings (Figure 2). Each screen is approximately 10 feet wide by 60 feet long and consists of 3/8 inch copper or stainless steel mesh and is equipped with ultrasonic differential arms and a screen wash system. During washing, the water is supplied as a spray and screens are rotated. There are two generating units which are fed by four continuously operating intake pumps which withdraw water up to 191 cubic feet per second (cfs).

The total design intake capacity for Units 1 and 2 is approximately 130 million gallons per day (MGD) utilizing four water pumps. The Plant Scholz CWIS is designed to withdraw up to 191 cfs.

Figure 2. Cooling Water Intake Structure Side-View at Plant Scholz



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3.0 WORK PLAN

This feasibility study, once approved by the department, will investigate and analyze various technologies for improving the existing aquatic life avoidance systems. Potential technologies to be investigated may include, but are not limited to:

- Fish handling and return systems
- Fish escape system
- Ristroph traveling screens (or equivalent)
- Barrier net systems and/or other aquatic life deterrent systems
- Passive wedge wire screen
- Filter fabric technology
- Flow reduction technologies (e.g. closed cycle cooling)
- Velocity reduction

Following BTA identification, technologies will be evaluated according to cost, effectiveness, compliance with 316(b) conditions, site applicability, impact to power generation, and required retrofitting. Other factors that may influence effectiveness such as seasonal and diurnal fluctuations of aquatic life abundance and product lifespan may be considered.

4.0 DELIVERABLES

A brief technical memorandum will be prepared, this report shall present the information described above, identifying the technologies that will be considered and the evaluation criteria. Upon reaching concurrence with FDEP on this scoping document, work will proceed with the alternatives evaluation.

A feasibility study report will then be prepared. This report shall present the information described, including a written description of each alternative along with all relevant benefits, costs, and other relevant factors. A final discussion of alternatives will be provided, including recommendations for the best five alternatives.

5.0 QUALIFICATIONS

MACTEC has the experience and ability to conduct a thorough, comprehensive feasibility study investigating aquatic avoidance technologies. Having conducted the Plant Scholz 316(b) Impingement Mortality Characterization Study (2009), MACTEC is familiar with the plant, the surrounding environment and the site history. In addition, MACTEC has performed numerous feasibility studies and is highly capable of researching and evaluating technological alternatives to various engineering and scientific problems.

6.0 REFERENCES

MACTEC Engineering and Consulting. 2009. Plant Scholz 316(b) Impingement Mortality Characterization Study. Technical Report Prepared for Gulf Power.

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