

### **(9) Use of Pressurized Ozone and Compressed Air Flotation with Membrane Filtration for Industrial Process Water Treatment at a Forest Products Facility**

In 18 months this project will demonstrate a membrane filtration system at a molded fiber paper mill. The process will reduce the amount of fresh water needed for mill operations. This project expands upon a complementary project, which focuses only on the ozone system in the plant stream. Integrating the ozone process with efficient membrane filtration will provide an overall efficiency not available with separate independent systems.

Total project cost: \$848,132

Funding request: \$380,750

Project Lead: New York State Energy Research and Development Authority

Project Participants: Michigan Department of Consumer and Industrial Services – State Energy Office; Pactiv Corporation

#### Progress in Past Quarter and Current Status:

During this quarter (Q10) progress which has occurred includes the following:

- \* Pactiv has submitted an invoice which has been paid by NYSERDA. The invoice specified that \$445,721.30 activity had occurred on this project. This represents \$110,920 of cost-match contributed by the industrial partner as creditable to this project, and a request for payment of the amount \$334,801.30. On November 21, 2006, NYSERDA approved payment of the amount \$334,801.30 (which consisted of \$120,528.47 of NYSERDA funds plus \$214,272.83 STAC funds which NYSERDA was able to draw down).
- \* Pactiv has procured and received delivery of all major pieces of equipment (except the ozone generator – has been procured, delivery has been delayed as explained below).
- \* Pactiv has placed all major pieces of equipment on their appropriate foundations.
- \* Pactiv has commenced installation of piping and electrical hook-ups to all major pieces of equipment, including assembly of the Krofta DAF retrofit parts & accept tank piping, system electrical and Master Control Cabinet (centralized electric control system) equipment, and process water storage tank reroutes due to demolition work and tank changes.
- \* Pactiv has continued benchmark sampling of process water (to establish the “before” conditions).
- \* Pactiv has begun programming the Programmable Logic Controller based on startup/shutdown/operational sequence and logic.
- \* Pactiv has engaged in planning with Niro to pretest the Krofta DAF accepts per RO feed quality.

#### Plans for Next Quarter

The project team will start-up and commission the equipment. Pactiv will continue benchmark sampling of process water (to establish the “before” conditions), as well as initiate operation of the equipment in various modes and at various parameter levels and conduct associated sampling of process water (to determine the “after” conditions and use these analytical results to identify optimum operating conditions for the equipment).

- \* Pactiv will finalize and pretest installation of Krofta DAF and support equipment.
- \* Pactiv will continue with final assembly/installation of RO Unit and support equipment.
- \* Pactiv will facilitate/resolve ozone generator delivery and transformer issue as indicated below.
- \* Pactiv will construct ozone generator containment vessel and support equipment.
- \* Pactiv will finalize PLC sequence logic programming work and controls installation work.

The vendor (Ozone Water Systems, Inc.) missed the original deliver date of the ozone generator. The ozone generator requires a transformer for the electrical supply to reduce it from the mill's standard 575 volt to the ozone generator's standard of 460 volt. This requirement has caused some delays in the fabrication of the ozone generator skid. Until the ozone generator is delivered the ozone containment vessel and support equipment/piping cannot be completed. Pactiv will follow up with Ozone Water Systems quickly and develop a new shipment and delivery date for early February based on the transformer problem being quickly resolved.

The project period was scheduled for completion December 31, 2006. NYSERDA received an extension from NASEO which establishes a new project completion date of June 30, 2007 (such extension was granted via letter from Michelle New dated December 18, 2006), and NYSERDA flowed along the extension to the industrial partner Pactiv.