

DOCUMENT MANAGEMENT SYSTEM

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Doc# NSCS-M-P-7091-50
 Title: Loss of Power, Serious Mechanical Failure or Severe Weather Impacts Wastewater Treat
 Issue Dt: 11/06/2006
 Revision Dt: 10/01/2018 Review Interval: 12
 Cat: Quality Doc Type: SOP
 Auth: Environmental
 Desc: Environmental ISO 14001
 Loc: Midwest - Utilities-Midwest - Plant Maintenance-Midwest-Gary Works

STEPS

Process Overview

Safety

Chrome Treatment Plant

PROCEDURES

The loss of electric power, a serious mechanical failure or severe weather can have serious negative impact on the ability to treat the industrial wastewater. Depending on what the failure is, the situation may be manageable or it may require shutdown of production lines.

Abnormal weather conditions, loss of electric power, or serious mechanical failures can cause unusual safety issues. Examples would be downed power lines, chemical leaks, wastewater spraying or mechanical equipment operating in an abnormal manner. Carry a flashlight, inspect equipment with care and be wary of your surroundings. Take extra time and be cautious.

If a loss of electric power and/or mechanical functionality is to a specific piece of equipment:

1. Immediately contact Maintenance for repair or Utilities Manager for power restoration as appropriate.
2. Shut the train(s) down that contains the failed equipment.
3. Monitor the 60,000 gallon EQ tank for volume capacity and ramp up the other train, if the parallel train is operable.
4. Call the Production Managers with a warning that shutdown of a line may be required.
5. Notify Utilities Manager.
6. Determine the wastewater flow rate that may continue to be processed from the operating units while maintaining the required effluent water quality. Consider the following:
 - a. EQ Tank level
 - b. Influent flow
 - c. Operating train throughput
 - d. Chemical feed functionality
 - e. Water quality (influent and effluent)
7. Contact the Production Managers and let them know the determination.
8. Continue to reevaluate the operation of the treatment plant as detailed in Step 6 above. Contact the Production Managers with updates.

If the treatment plant experiences a complete loss of electric power:

1. Contact the Production Managers for immediate shutdown of the lines.
2. Contact Utilities Manager for power restoration.
3. Contact Process Control [REDACTED] and notify them of the power loss.
4. Manually close valves on all air pumps.

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5. Close the influent valve from the Greenbelt II Landfill and have the Utility Helper inspect the landfill sump.

Final Treatment Plant

If a loss of electric power and/or mechanical functionality is to a specific piece of equipment:

1. Immediately contact Maintenance for repair or Utilities Manager for power restoration as appropriate.
2. Notify the Production Manager of the issue and potential need for the lines to shutdown. If the loss of the equipment is not readily corrected, re-notify the Production Manager and request the lines reduce to the minimum flow possible, or shutdown as needed.
3. If the equipment loss is a chemical feed pump or rotodip, utilize the standby pump, if functional. Otherwise, manually feed chemical directly from the bulk tanks. For polymer, gravity feed aged polymer from a portable container.
4. If the equipment loss is the continuous display pH meters, manual entry of lime and acid addition will be required due to the loss of automatic control. Increase the frequency of handheld meter checks to at least once every 30 minutes. Adjust the lime and acid addition slowly to maintain stability.
5. If the equipment loss is a blower, switch to the redundant blower. If both blowers have lost functionality, use an air hose to inject plant air into the tank manually. Increase the frequency of iron quick tests to check that the iron is oxidized.
6. If the equipment loss is a mixer, increase the frequency of handheld meter analytical sampling at the mix tank and internal Outfall 104. An air lance may be substituted for the mixer if necessary.
7. If the equipment loss is the oil skimming flights in the sedimentation basins, increase visual monitoring of the surface oils in the sedimentation basins. Use a water hose to direct the oil to the skimmer tube if oils are accumulating, particularly at the north end. Make sure oil is sufficiently removed in the Equalization Basins to minimize loading.
8. If the equipment loss is the cross collectors in the sedimentation basins, increase the frequency of the solids settling (%) test. If the solids % decreases to less than ████, recirculate more flow to the mix tank. This will decrease the solids flow rate to the sludge dewatering plant. Notify the Sludge Dewatering Operator of the flow decrease and the dilute solids issue.
9. If the equipment loss is the sludge recycle pumps, utilize a redundant pump. If all of the pumps are lost, notify the Sludge Dewatering Operator of the stop in flow. A sludge bed will accumulate on the

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bottom of the sedimentation basins, and no sludge will be sent to the mix tank for seeding to better form the flocculated solids. Increase observations of the sedimentation basin surface and weir overflows. Slightly and slowly increase starch and polymer addition as necessary to increase solids density.

If the treatment plant experiences a complete loss of electric power:

1. Contact the Production Managers to initiate a controlled shutdown.
2. Contact Utilities Manager for power restoration and for immediate assistance.
3. Partially close the equalization basin discharge valves to minimize the plant throughput and provide the Operator additional reaction time. Continue to monitor the basin level and adjust the valves as needed.
4. Follow the manual operation guides in the section above.

Oil Pretreatment Plant

If a loss of electric power and/or mechanical functionality is to a specific piece of equipment:

1. Immediately contact Maintenance for repair or Utilities Manager for power restoration as appropriate. Notify the Final Treat Operator.
2. If the equipment loss is a chemical feed pump, utilize a standby pump if functional. If not, monitor the oil removal without the chemical addition. If the oil is not separating properly, manually add chemical by directly feeding from the bulk tanks. Add the chemical slowly, and increase at a controlled rate as needed.
3. If the equipment loss is the Monroe interceptor or the DAF, bypass this equipment and transfer all North API effluent flow to Final Treat. The Monroe interceptor and DAF provide additional oil removal. Contact Final Treat Operator and let them know of the potential for additional oil loading to the Equalization Basins.
4. If the loss of the equipment is not readily corrected and oil separation is compromised, notify the Production Managers and ask them to curtail production lines as necessary.

If the treatment plant experiences a complete loss of electric power:

1. Contact Utilities Manager for power restoration and request immediate assistance.
2. Contact the Production Managers and ask for a reduction in flow to the extent possible, and that a future shutdown of the production lines may be needed.

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3. Flow will continue through the interceptors. Utilize the North API, Monroe and DAF to provide the maximum retention time for oil separation.

Sludge Dewater Plant

If a loss of electric power and/or mechanical functionality is to a specific piece of equipment:

1. Immediately contact Maintenance for repair or Utilities Manager for power restoration as appropriate. Notify the Final Treat Operator.
2. If the equipment loss is the lime slurry pump, utilize the redundant pump. If both pumps are failed, the system can run temporarily.
3. If the equipment loss is a thickener rake, switch the influent flow from Final Treat to the standby thickener. Continue to pump to the filter press from the thickener with the nonfunctional rake to reduce the sludge bed. If both rakes are lost, temporary operation can continue until the beds becomes too compacted for pumping to the filter press.
4. If the equipment loss is the filter press feed pump, utilize the redundant pump. If both pumps have failed, continue to accumulate sludge in the thickeners within the operating parameters. Contact the Final Treat Operator and the Shift Manager. Have the Final Treat Operator reduce the sludge wasting flow to minimize loading of solids on the thickener until repairs can be made. Utilize the redundant thickener for additional capacity.
5. If the equipment loss is the filter press, utilize the redundant filter press. If both presses are non-functional, follow the methodology above for a failure of the filter press feed pump.
6. If the loss of the equipment is not readily corrected and the thickener solids are excessive, notify the Final Treat Operator again and ask them to reduce or stop the flow of sludge wasting to the Sludge Dewater Plant. If the Final Treatment Plant can no longer treat adequately without wasting sludge, the Final Treat Operator may need to ask the production lines to shutdown.

If the treatment plant experiences a complete loss of electric power:

1. Contact Utilities Manager for power restoration and immediate assistance.
2. Contact the Final Treat Operator and ask to minimize the sludge wasting flow without compromise of treatment.
3. Continue to accumulate solids in the thickeners. The supernatant will continue to gravity flow and return to the Final Treatment Plant.

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Documentation

If the mechanical equipment must be taken out of service, or part of the treatment system is shut down, note it on the treatment log sheet for the applicable treatment plant.

Consequences Of Noncompliance: **Noncompliance with environmental procedures could result in harm to the environment and may expose the company and responsible individuals to enforcement actions that could include civil or criminal penalties for violations of environmental laws, rules and/or permit conditions.**