

UNITED STATES DISTRICT COURT
for the
DISTRICT OF MASSACHUSETTS

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UNITED STATES OF AMERICA, .
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Plaintiff, .
. CIVIL ACTION
v. . No. 85-0489-MA
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METROPOLITAN DISTRICT COMMISSION, .
et al., .
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Defendants. . .
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CONSERVATION LAW FOUNDATION OF .
NEW ENGLAND, INC., .
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Plaintiff, .
. CIVIL ACTION
v. . No. 83-1614-MA
.
METROPOLITAN DISTRICT COMMISSION, .
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Defendants. .
.
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MWRA MONTHLY COMPLIANCE REPORT
FOR MAY 1998 AND
PROGRESS REPORT AS OF JUNE 15, 1998

The Massachusetts Water Resources Authority (the "Authority") submits the following monthly compliance report for the month of May 1998 and supplementary compliance information in accordance with the Court's order of December 23, 1985, subsequent orders of the Court and undertakings of the Authority.

Schedule Six

There were no scheduled activities for the month of May 1998 on the Court's Schedule Six.

1. Progress Report.

1. Fiscal Matters.

1. State Funding.

On June 3, 1998, the Massachusetts State Senate adopted its proposed Fiscal Year ("FY") 1998 state budget. Appropriations in the Senate budget related to the Authority's projects and facilities match those in the House of

Representative's FY 1998 budget reported last month.(1) The House and Senate have appointed a Joint Conference Committee to reconcile the differences on other matters between the House and Senate budgets. The Joint Conference Committee is expected to issue its report within the next week.

Harbor Management.

Preparation for Transfer of South System Flows.

The Authority has continued its efforts to resolve electrical problems in the South System Pump Station in order to move forward with the transfer of South System flows to Deer Island through the new Nut Island Headworks. When the Authority last reported, the primary concern was the level of harmonic distortion resulting from the operation of multiple pumps in combination with the operation of other equipment on Deer Island. Since then, the transformers on top of the pump station became a matter of significant concern as well. During testing on May 20, a fire occurred in one of the eight transformers, for reasons still under investigation. In the course of subsequent testing of other transformers at high voltage levels, another transformer failed. Because the transformers are associated with specific pumps, two of the eight pumps are not available for operation until the damaged transformers can be replaced.

For the long term, the Authority has decided it may be prudent to replace all of the transformers with a higher performance model. The process to define the specifications for replacements is already underway. A number of other measures are also under consideration to ensure long-term reliability of the transformers. For the short term, the Authority is pursuing expedited procurement of four transformers, two to replace the ones that failed and two to be available as spares. In addition, the Authority has developed special operating procedures designed to minimize the risk of further problems.(2)

In the meantime, the Authority has determined that it can operate as many as four pumps at one time in the South System Pump Station without risking an unacceptable level of harmonic distortion. Four pumps will provide the capacity to pump at a rate of up to 318 million gallons per day ("MGD"), which represents about 99 percent of expected South System flows. Operating the South System Pump Station even with this limitation for the time being will result in a significant improvement environmentally, because the capacity of the Nut Island Treatment Plant has been limited to 250 to 280 MGD (resulting in the bypass of any flows above that amount). Therefore, the Authority expects the transfer of flows from Nut Island through the new headworks as soon as some minor repairs and adjustments are completed and all six pumps not affected by the transformer failures are available. Of those pumps, as many as four will be in simultaneous operation, and at least two will provide redundancy.(3) Unless other problems develop, the Authority may be in a position to initiate operation of the Nut Island Headworks as early as next Monday, June 22, 1998.(4)

Although the Authority has confidence in its plan to move ahead with transferring South System flows through the new headworks for treatment at Deer Island in the near future, it will act cautiously at first, operating the headworks on a trial basis for up to 60 days and retaining the availability of the Nut Island Treatment Plant in the event of a major operational problem at the South System Pump Station. During this time, staff will clean and secure the Nut Island plant, maintain the digester complex and remain in their Nut Island positions. Any decision to move forward with demolition of the Nut Island Treatment Plant will be made based on an evaluation of the operation of the headworks and the South System Pump Station during the initial testing period.

While the Authority has been working on procedures to allow operation of the Nut Island Headworks and transfer of flows to proceed, efforts to move forward with a long-term solution for the harmonic distortion problem are continuing. The project design engineer has collected data throughout Deer Island and incorporated it into a harmonic distortion model which will be used to finalize the design of a new harmonic filter bank. The Authority intends to complete design, fabrication and installation of an improved filtering system as quickly as possible, so that the four-pump operating limitation in the South System Pump Station will no longer be necessary.

Dedication of South System Pump Station.

On June 12, 1998, the Authority hosted an event on Deer Island to dedicate the new pump station as the Lydia Goodhue Pump Station. Upon the recommendation of several environmental advocacy organizations, including the Authority's own Wastewater Advisory Committee, the Authority's Board of Directors voted in June 1997 to name the facility in honor of Ms. Goodhue, in recognition of the leadership and commitment she brought to achieving a cleaner Boston Harbor. Ms. Goodhue was a preeminent representative of the many private citizens who have contributed in countless ways through various committees and organizations to the improvement of the area's wastewater system and Boston Harbor and its tributaries. The program on June 12 was planned in appreciation of the role citizen participation has played in protecting natural resources and ensuring environmentally protective infrastructure. A copy of the program for the event is attached as Exhibit "A."(5)

Thermal Plant.

In the Thermal Plant, the contractor has begun the 30-day functional testing of the distributed control system and expects to complete the test by early July.(6) The contractor continues to work on the installation of flame arrestors and oil filter modifications to the digester gas system. Testing of the digester gas system will resume in the Fall after the installation of permanent cooling water lines necessary to dissipate excess heat from the boilers. The contract to construct the cooling water lines (which was constrained previously by a site conflict with the Effluent Outfall Tunnel) was awarded earlier this month. Work is scheduled to be completed by October.

Construction of Effluent Outfall Tunnel.

In the Effluent Outfall Tunnel, work continues on the contact grouting, the first pass clean-up and repair of the tunnel arch and the final clean-up and repair of the tunnel invert. Last month the contractor halted operations for two weeks to fix a counter weight and cable on the hoist system. Since resuming work, the contractor has completed grouting of the tunnel invert to within 730 feet of the Deer Island shaft and the tunnel arch to within 1,200 feet of the shaft. Work on the first pass clean-up and repair of the tunnel arch is now within 4,500 feet of the Deer Island shaft. Final clean-up and repair of the tunnel invert is completed to within five miles of the shaft.

On June 10, the Board of Directors approved an extension to the Memorandum of Understanding with the City of Boston (Boston Fire Department) for the provision of backup tunnel rescue services through the completion of the Outfall Tunnel. The Boston Fire Department has provided backup tunnel rescue service to the tunnel contractors since 1991.

Transition in Program Management.

On June 10, 1998, the Board of Directors approved several personnel changes that reflect the current status of the Authority's progress in planning and constructing the new facilities on Deer Island. Formed in 1987 under the leadership of Richard D. Fox, the Program Management Division ("PMD") has overseen the planning, design and construction of the more than \$3 billion of new facilities on Deer Island and Nut Island.(7) After reaching a staffing level of 51 during the peak years of design and construction activity, PMD now has a staff of 42 under the leadership of Walter G. Armstrong, one of the original Deputy Directors under Mr. Fox, and Division Director since Mr. Fox's departure in 1992.(8) By December 1998, PMD staff is expected to be reduced further to 33 positions.

One of the key changes approved by the Board was the transfer of PMD's Manager of Engineering Services, Daniel K. O'Brien, to the Sewerage Division, which has ongoing responsibility for managing, operating and maintaining the new treatment facilities constructed by PMD. Mr. O'Brien will serve as Manager, Deer Island Capital Program and Transition Planning, at the Deer Island Treatment Plant. With the Authority since 1986, he has been involved in the planning and design of the Deer Island facilities from the outset, with responsibilities for directing the preparation of the 1988 Secondary Treatment Facilities Plan and overseeing facility design. In his new position, he will establish a master plan for an ongoing capital program, implement a plant equipment replacement program and manage the transition of various programs and responsibilities related to Deer Island

from PMD to the Deer Island Treatment Plant. His experience and leadership should ensure an orderly transition between PMD and the plant and continued commitment to maintaining the Authority's investment in its new facilities.

In addition, the Board approved other personnel changes to maintain PMD's resources to manage effectively the \$360 million in construction that remains, support the start up of facilities still in construction and respond to claims and litigation related to completion and close-out of various construction contracts. Certain functions and staff managed for PMD by Mr. O'Brien will be reassigned to two remaining subdivisions under the direction of newly-appointed deputies. William Hodgson will become Deputy Director for Construction and Engineering Services, filling the position recently vacated by Charles Button.⁽⁹⁾ Mr. Hodgson has over 25 years of experience managing construction projects, most recently as a Senior Construction Manager for the Authority since 1989, overseeing construction of all liquid process facilities on Deer Island. Ralph Wallace will become Deputy Director for Management and Administrative Services. Mr. Wallace has worked in project management for nearly 15 years. He joined PMD in 1994 and has directed the administrative management of the Boston Harbor Project, overseeing budgeting, contract and claims administration, scheduling and other related functions.

Week-end Storm Event.

During the severe storm that took place over this past week-end, the Authority activated its Emergency Operations Center to coordinate its response to the extraordinary burden placed on the area's wastewater collection and treatment systems by the record-setting rainfall. The Authority monitored the systems closely and deployed staff to maintain system readiness and provide emergency coverage. The Authority's facilities generally operated well and at maximum capacity throughout the period, although the volume of flows greatly exceeded their peak capacities. The Authority's Emergency Center remains active in readiness for the additional rain predicted this evening and throughout the week.

Residuals Program.

Pelletizing Plant Operations.

On June 3, 1998, an incident occurred at the pelletizing plant at the Fore River Staging Area, resulting in the temporary shutdown of Dryer Train No. 4. The exhaust fan failed, leaving Train No. 4 inoperable and the pellet plant with only three operable dryer trains until the fan is repaired. Repairs are estimated to take about four weeks. The three trains will provide sufficient capacity to pelletize all of the sludge expected to be produced during this time period. However, another failure in an operating dryer train would require shipping sludge cake to a landfill. Arrangements are in place to make the transition to simultaneous production of cake and pellets as smooth as possible, should it become necessary.

Pelletizing Plant Expansion.

Inside the pelletizing plant at the Fore River Staging Area, the contractor for expansion of the plant completed connecting all electrical power and control wiring to the two new dryer trains. The contractor also completed check-out of controls and manual testing of the two new dryer trains but delayed the start of the interlock testing, due to changes needed in the programming of the system which monitors and controls the centrifuges and dryer trains. Once the program changes have been completed and tested, the contractor will proceed with interlock testing.

Combined Sewer Overflow Control.

Schedule Revisions.

The Authority believes that it is close to resolving remaining issues with EPA regarding proposed amendments to Schedule Six necessary to support recent developments in the program for combined sewer overflow ("CSO") control. Following communication with other parties to clarify any additional revisions of the current schedule

that may be proposed, the Authority expects to be in position to present the proposed changes to the Court for its consideration before the end of the month.

Transport System Improvements.

Framingham Extension Relief Sewer.

The Authority reported last month that it was unable to meet an April 30 milestone in an Administrative Order issued by the Environmental Protection Agency for initiating operations of the new Framingham Extension Relief Sewer ("FERS") system.(10) Several problems arose during final testing of the new pump station, the most serious of which were significant odor problems at several locations and difficulties with the signaling system used to control operations. Since last month's report, the Authority determined that test operations of the pumps during extreme wet weather events in May were sufficient to meet operational testing requirements, and the facility is now available for operation using manual controls. Problems with the automatic signaling system remain to be resolved. Rather than operate the FERS daily as originally intended, for the immediate future the Authority plans to operate it on an as-needed basis, depending on weather conditions and field observation of upstream conditions, to ensure that sufficient transport capacity exists and no illegal overflows occur. The Authority has implemented interim measures and an operating plan to minimize odor problems when these facilities are in use. In the meantime, the Authority will continue to work toward resolution of the signalling problem and addressing odor issues for the longer term. In regard to odor, the Authority is obtaining immediate assistance from a nationally recognized expert in the field of odor and corrosion technology to develop measures for effective odor control.(11)

Braintree-Weymouth Relief Facilities.

As anticipated, the Authority met with representatives of the Massachusetts Department of Environmental Protection ("DEP") on May 20, 1998, to discuss the Braintree-Weymouth Relief Facilities Project and DEP's enforcement initiative. Another in what is likely to be a series of meetings regarding a potential Administrative Consent Order took place today. In the meantime, the Authority is continuing with design and preparation of permit applications for the project.

Quincy Pump Facilities.

The Authority is moving forward with two components of its project to replace three pumping stations and associated force mains in the City of Quincy.(12) On May 20, 1998, the Board of Directors approved the award of a construction contract for the replacement of the Hough's Neck Lift Station, a facility in continuous operation since 1942. The new station will be located adjacent to the existing structure, which will be demolished once the new facility is operational. Due to the limited area at the site and its proximity to residential and recreational areas, the new station will be precast, with much of the construction performed at the manufacturer's plant.

In addition, on June 10, 1998, the Authority's Board approved the award of a contract for the rehabilitation of the force main associated with the Quincy Pumping Station. Under this contract, the contractor will clean an existing 30-inch force main and install a new cement lining, as well as discontinue use of a severely corroded 24-inch force main constructed in 1902.

Cummingsville Branch Replacement Sewer.

On May 20, 1998, the Board also approved the award of a contract for design and construction services for the Cummingsville Branch Replacement Sewer project. The existing Cummingsville Branch Sewer System, which is located in the Town of Winchester, consists of the Cummingsville Branch Sewer, constructed around 1894, and the Cummingsville Branch Relief Sewer, constructed in 1952. This interceptor system receives wastewater from Burlington and sections of Winchester and Woburn. The new project will replace the existing Cummingsville Branch Sewer and, in so doing, add capacity to the system.

Oversight of Harbor Water Quality Programs.

The Authority notes the recent departure of a key member of the Sewerage Division staff, Dr. Michael S. Connor, Director of Environmental Quality. Hired in 1988 to fill a new position identified at that time as Director of Harbor Studies,(13) Dr. Connor has overseen the Authority's research, monitoring and compliance programs associated with wastewater. Under his direction, among other activities, the Authority developed its extensive outfall monitoring program,(14) the Contingency Plan(15) and the Deer Island Central Laboratory.(16) Dr. Connor also was the primary author of the annual State of the Harbor reports the Authority has distributed for several years, charting the progress of water quality improvements in Boston Harbor area and its environs.(17) He has represented the Authority extensively in its interaction with other scientists, state and federal regulatory agencies, environmental advocacy organizations and special interest groups concerned about the Authority's wastewater facilities and their potential effects on the environment. Dr. Connor undoubtedly will continue to be a strong advocate for protecting the marine environment in his new position as Vice President of Programs and Exhibits at the New England Aquarium.

By its attorneys,

John M. Stevens (BBO No. 480140)

Dated: June 15, 1998

Notes:

1. See May 15, 1998 Compliance and Progress Report, pp. 2-3.
2. For example, because most of the problems appear to be related to wet or damp weather conditions, staff plan to keep the transformers energized continually to prevent moisture build-up and subsequent shortages. Also, an operator will be assigned full time to monitor special temperature devices installed on the transformers. Should temperatures rise beyond a certain point, the operating speed of the associated pump can be modified.
3. The design for the South System Pump Station provided for as many as six pumps to be available to handle peak flows, with two additional pumps for redundancy. Generally, only two pumps are required for typical dry weather flows.
4. The Authority is preparing for the possibility of occasional bypasses of flow at Nut Island -- the one percent of typical annual flows that might exceed the capacity of the South System Pump Station as long as it is limited to four pumps -- by developing a means to provide disinfection at Nut Island. Disinfection of any flows discharged at that location (which should not exceed 50 to 75 MGD per event) is consistent with past practice when bypasses have occurred at the Nut Island Treatment Plant.
5. The Authority expects to schedule another event at a later date to decommission the Nut Island Treatment Plant and recognize the activation of all the facilities to transfer South System flows to Deer Island. Ms. Goodhue served as one of the chairpersons of the July 1995 event on Deer Island recognizing the completion of the North System primary treatment facilities and the demolition of the old Deer Island Treatment Plant.
6. As reported last month, the Authority expects the contractor to turn over the Thermal Plant, except for the digester gas system, in July.
7. See Compliance and Progress Reports for November 16, 1987, pp. 3-4, and December 15, 1987, p. 5, for early reports on the formation of the Program Management Unit.

8. See Compliance and Progress Report for June 15, 1992, p. 12.
9. See Compliance and Progress Report for March 16, 1998, p. 5.
10. See May 15, 1998 Compliance and Progress Report, pp. 9-11.
11. The recent problems experienced in the FERS system are symptomatic of odor and corrosion problems that have occurred for sometime in a number of areas throughout the Framingham interceptor system. Another consultant engaged by the Authority has been conducting a broader Corrosion and Odor Control study to identify the sources and potential corrective measures, with a final report expected by Fall.
12. See Compliance and Progress Report dated August 15, 1994, pp. 16-17, for a report on beginning design of this project.
13. See Compliance and Progress Report for January 15, 1988, p. 4.
14. See Compliance and Progress Report for November 17, 1997, p. 18, for the Authority's most recent report on the outfall monitoring program.
15. A copy of the Authority's Contingency Plan was submitted to the Court as Exhibit "C" to the December 15, 1997 Compliance and Progress Report. See also pp. 14-15 of that Report.
16. See Compliance and Progress Report for October 16, 1995, pp. 14-16, for a description of the Central Laboratory.
17. The Authority's most recent State of the Harbor Report was attached to the November 17, 1997 Compliance and Progress Report as Exhibit "G."