



UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

110874  
12056

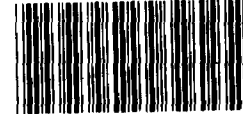
PROCUREMENT AND SYSTEMS  
ACQUISITION DIVISION

B-166506

NOVEMBER 16, 1979

The Honorable Douglas M. Costle  
Administrator, Environmental  
Protection Agency

*AGC 24*  
*AGC 20024*



110874

Dear Mr. Costle:

Subject: Need for More Effective Management of  
Warranties (PSAD-80-11)

EPA is awarding billions of dollars in grants each year to municipalities and other public entities to help finance construction of wastewater treatment systems. In administering its construction grants program, EPA does not evaluate the adequacy of the warranty provisions of contracts awarded by grantees for equipment and supplies used in constructing treatment facilities or how well grantees exercise their warranty rights.

Grantees do not always realize the full benefits of their warranties. Therefore, EPA grant funds, which partially paid for these warranties, may not be fully achieving their intended purpose, and grantees may be unnecessarily bearing costs that should be borne by construction contractors or equipment manufacturers under terms of the warranty.

We performed our review at 13 grantee projects (see enc. I) and identified a number of issues for your attention. For instance, grantees could benefit from better EPA guidance and more specific wording of contract warranty provisions. Grantees should also act to fully exercise warranty rights, seek reimbursement for warranty repair costs being absorbed by grantees, and explore methods to expedite contractor response in making repairs.

WARRANTY PROCESS

Contracts between the grantees and general contractors usually contain 1-year guarantees. In effect, the contractors are responsible for correcting all defects in material and workmanship discovered during the 1-year period after grantee acceptance.

*Letter Report 007822*

(951472)

According to an EPA official, the agency has no regulations or guidelines for warranty administration by the grantees or its monitoring by EPA, nor is it currently developing or planning any such guidance. Generally, major warranty repairs are handled in a relatively informal manner between the grantee, a consulting engineer, the general contractor, and his subcontractors/equipment manufacturers. After identifying a defect, the grantee notifies the consulting engineer who contacts the contractor and/or manufacturer advising it of the defect and need for repair under the warranty provisions. Generally, the contractor and the manufacturer arrange with the grantee to make the necessary repair. The manufacturer provides replacement parts and technical expertise, while the grantee or general contractor provides much of the labor.

NEED FOR CONTRACT WARRANTIES TO BE MORE  
SPECIFIC ON CORRECTION OF DEFECTS

Grantees have incurred costs in repairing equipment under warranty which should have been absorbed by the general contractor or the equipment manufacturers. Many grantees have not established procedures to bill contractors for such costs. Also, grantees have experienced delays in getting contractors or manufacturers to repair defective equipment, especially when the contractor no longer has a work force at the grantees' facilities.

Warranty provisions contained in the construction contracts of some grantees were less specific regarding responsibilities and procedures applicable to correction of defects than in those of other grantees. In our opinion, grantees can strengthen their positions in enforcing warranties by including more specific language in warranty clauses, thus providing both grantees and contractors with a better understanding of each other's responsibilities and rights.

Contractors not repairing warranted  
equipment promptly

Grantees believe it sometimes takes longer than it should for contractors and/or equipment manufacturers to repair defective equipment. For example, at the Woonsocket, Rhode Island, Regional Wastewater Treatment Facility, two standby generators needed for emergency power developed synchronization problems in October 1977 during the 1-year warranty period. Several

times between October 1977 and January 1979, the general contractor, the generator subcontractor, and component representatives were notified of the problem. On several occasions, they went to the plant and ran tests on the generators. Not until January 31, 1979, almost 16 months after initial notification to the contractor, were the generators repaired to Woonsocket's satisfaction. The plant engineer said that the delay was caused because the contractor and equipment manufacturer failed to get together to work on the problem and agree on a solution.

Occasionally grantees incur cost of repairing equipment under warranty

To expedite repairs, especially when the contractor no longer has a work force at the facility, grantees provide personnel to assist the manufacturers in making repairs. In most of these cases, grantees did not seek reimbursement of such costs from the contractors or manufacturers. Moreover, many grantees were not familiar with procedures to do so. Also, many minor repairs are also made by grantees without seeking assistance or reimbursement from contractors and/or manufacturers.

For example, personnel of the Greater Lawrence Sanitary District in Lawrence, Massachusetts, expended 412 hours--valued at about \$3,300--to replace defective sprockets and chains which operate a bucket elevator that removes ashes from an incinerator. The manufacturer provided the replacement sprockets and chains valued at \$7,900. The contractor agreed to do the installation work, but stated it would take a week to assign a work force. The grantee, wanting the equipment back in operation as soon as possible, installed the replacement parts using plant personnel. According to the grantee, no attempt was made to seek reimbursement from the contractor because (1) it was not the practice to do so, (2) it did not increase budgeted or out-of-pocket costs, and (3) the grantee had not established procedures for processing such a claim for reimbursement.

At Baltimore's Patapsco facility, we noted 12 instances where plant personnel made minor repairs to equipment under warranty. Although 160 hours of labor was incurred at a cost estimated at \$1,600, the grantee did not seek reimbursement from the contractor. Upon questioning this practice, we were advised such future repairs will be charged to the contractor's final payment account.

Contract warranty provisions are too general regarding repair responsibilities

The problems associated with grantees not seeking reimbursement for costs incurred to repair warranty items and delays in getting prompt corrective action are due, in part, to warranty provisions being too general. The provisions should provide for prompt repair of defects, permit the grantee to have work done elsewhere at contractor expense if not done promptly, and provide reimbursement procedures. The warranty should also define what constitutes prompt repair and provide a means by which grantees can obtain emergency and minor warranty repairs without jeopardizing warranty coverage.

Enclosure II illustrates the disparity between warranty provisions of two grantees--the Woonsocket, Rhode Island, and Wards Island, New York, facilities. Although the Wards Island provisions more adequately define responsibilities, they do not adequately define what constitutes prompt repairs or explain how emergency and minor warrantable repairs made by the grantee are to be handled and reimbursed.

GRANTEE WARRANTIES EXPIRING BEFORE EQUIPMENT IS PLACED IN OPERATION

Grantees sometimes lose warranty benefits because the warranty periods on equipment or major facility segments either partially or completely expire before being placed in operation.

In Woonsocket, the contract provided for start of the warranty period upon successful field testing of individual pieces of equipment. The 1-year warranty period began on much of the equipment in September 1977, but the plant did not go into operation until January 1978. As a result, warranty coverage was lost for about 4 months of equipment operation.

In contrast, under the contract at the Greater Lawrence facility, the warranty period was to have started in February 1977 when the facility was accepted as ready for operation. Because of bad winter weather, the consulting engineer felt that startup should be delayed until spring. The grantee and consulting engineer were successful in getting the contractor to extend the starting date of warranty coverage to the date the plant began operation.

This was not the case where warranties on major segments of three projects--the Patapsco Wastewater Treatment Plant in Baltimore, Maryland; the Alexandria Sanitation Authority (ASA) in Alexandria, Virginia; and the Upper Occoquan Sewage Authority (UOSA) in Manassas Park, Virginia--serving the Washington, D.C., area have either completely expired or are expected to expire before the facilities can be placed in operation. For example, at the Patapsco plant, secondary treatment facilities costing about \$35 million will soon be accepted by the locality. However, they are not expected to be placed into operation before the 1-year warranty expires. This will occur because site limitations necessitated a time-phase scheduling of nine construction contracts that were disrupted and other problems, such as the 1973 oil embargo, EPA funding delays, and changes necessitated by additional EPA requirements.

As a result, the warranties will not serve their intended purposes. The grantees can no longer look to the contractor or manufacturers for repairs, should they be needed, when the plants are in operation. Attempts made by officials of the ASA and UOSA facilities to have the contractor warranties extended have been unsuccessful because of outright contractor refusal or because contractors quoted prohibitive prices for the requested extension.

IMPROVEMENT IN RECORDKEEPING AND  
DOCUMENTATION COULD BENEFIT GRANTEEES

Generally, grantees do not have adequate records detailing what equipment is currently under warranty or the problems and repair work related to warranties performed between the time of equipment installation and the end of the warranty period. Also, they neither adequately document the actions they have taken to get corrective action nor the actions or repairs accomplished by the contractor or manufacturer. As a result, equipment records may not completely show historical data important to the grantee in demonstrating lack of reliability of certain equipment during the warranty period. This failure by grantees may adversely affect the resolution of any potential disputes arising through arbitration or litigation.

GRANTEE PERSONNEL DO NOT  
HAVE ADEQUATE TRAINING TO  
EFFECTIVELY ENFORCE WARRANTIES

At two plants, UOSA and ASA, we found that the Authority personnel did not possess the in-depth technical expertise required to effectively enforce warranties.

Private consulting engineers have a contractual relationship to carry out specific services for the grantee. The private consulting engineers at these plants, in addition to other services, have prime responsibility for providing the required expertise for enforcing warranty provisions. They analyze the causes of equipment breakdowns and determine if repairs would be covered under the warranty. This analysis often requires in-depth technical knowledge of equipment operations and a thorough understanding of the various possible causes for equipment breakdowns. The consulting engineers accumulate the evidence, make the initial telephone contact to the contractor, and follow up with a written notice enumerating the technical evidence. If the contractor disagrees that the repair is warranted, the engineer follows up with more letters to the contractors presenting additional technical evidence. Plant personnel at both these facilities have little involvement in this process.

According to the consulting engineers at ASA, the Authority personnel do not have the technical knowledge required to effectively enforce warranties. The consulting engineers at UOSA believe Authority personnel will not be able to enforce warranties and care for equipment that fails when their contract expires because they do not have a program to train personnel to troubleshoot equipment malfunctions.

In contrast, the maintenance personnel at the Blue Plains Treatment Plant are trained in inspecting the equipment for malfunctions and analyzing their causes. This procedure of inspection and analysis affords them the opportunity to become familiar with equipment characteristics and to obtain a higher degree of expertise to more effectively enforce warranties.

#### CONCLUSIONS AND RECOMMENDATIONS

In our opinion, EPA could do more to help grantees realize the full benefits of warranty coverages in contracts for construction of treatment facilities. Consequently, we recommend that the Administrator, EPA, aid grantees and consulting engineers by developing guidance to:

- Make contract warranties more effective by including specific language on such matters as (1) liability of the contractor for reasonable grantee costs incurred in emergency situations or for minor repairs, (2) right of the grantee to correct or have corrected defects

at the contractor's expense when the contractor does not perform promptly, (3) procedures to follow for reimbursement or offsetting such costs against amounts being withheld from contractors pending successful completion of contract work, and (4) starting warranty coverage, where appropriate, at the time facilities/equipments are put into operation, as long as done so within a reasonable period after acceptance.

--Establish procedures and training for adequately documenting historical data for equipment reliability assessments and documenting grantee/contractor/manufacturer actions concerning warranty claims.

We also recommend that EPA encourage grantees to train its employees in equipment inspection, analysis, and correction of equipment malfunctions to assure a more efficient operation and better warranty enforcement.

As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the chairman of the House Committee on Public Works and Transportation, the chairman of the Senate Committee on Environment and Public Works, and the Director, Office of Management and Budget.

We appreciate the courtesy and cooperation extended our staff during the review.

Sincerely yours,

*J. H. Stolarow*

J. H. Stolarow  
Director

*Jerome H.  
PSAD*

*HS ED31000  
AGC000270  
SEN06400*

Enclosures - 2

LISTING OF PROJECTS INCLUDED IN REVIEW

<u>Grantee and location</u>	<u>Project name</u>
Delaware County Regional Water Quality Control Authority, Chester, Pa.  Wilmington, Del.	Delcora Western Regional Treat- ment Plant  Water Pollution Control Facili- ties
Baltimore, Md.	✓ Patapsco Wastewater Treatment Plant <i>DLG03370</i>
Nassau County, N.Y.	Cedar Creek Water Pollution Control Plant
New York, N.Y.	✓ Wards Island Sewer Treatment Works <i>DLG03371</i>
Alexandria Sanitation Authority, Va.  Washington, D.C.	✓ Alexandria Sanitation Authority  ✓ Blue Plains Wastewater Treat- ment Plant <i>DLG03372</i>
Upper Occoquan Sewage Authority, Manassas Park, Va.	✓ Upper Occoquan Regional Water Reclamation Plant <i>DLG03373</i>
Greater Lawrence Sanitary District, Mass.  Woonsocket, R.I.	✓ Greater Lawrence Sanitary Dis- trict Water Pollution Control Facilities <i>DLG03375</i> ✓ Woonsocket Regional Wastewater Treatment Plant <i>DLG03376</i>
Springfield, Mass.	Bondi Island Sewer Treatment Plant
Haverhill, Mass.	Haverhill Wastewater Treatment Plant
New London, Conn.	Trumbull Street Sewage Treat- ment Plant



EXAMPLE WARRANTY PROVISIONSWOONSOCKET REGIONAL WASTEWATER  
TREATMENT PLANT, RHODE ISLAND

"\* \* \* General Guaranty: Neither the final certificate of payment nor any provision in the contract documents nor partial or entire occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with the contract documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of final acceptance of the work unless a longer period is specified. The Owner will give notice of observed defects with reasonable promptness."

WARDS ISLAND WASTE TREATMENT  
PLANT, NEW YORK, NEW YORK

"\* \* \* Maintenance and Guaranty: The Contractor must promptly repair, replace, restore or rebuild, as the Commissioner may determine, any finished work in which defects of materials or workmanship may appear or to which damage may occur because of such defects, during the one-year period subsequent to the date of final acceptance, except where other periods of maintenance and guarantee are provided for.

"As security for the faithful performance by the Contractor of his obligations hereunder, the Comptroller shall retain from the final payment hereunder the sum fixed in the Specifications. If the Contractor has faithfully performed all his obligations hereunder the Commissioner shall so certify to the Comptroller within five (5) days after the expiration of one (1) year from the date of completion and acceptance of the work or within five (5) days after the expiration of guarantee period fixed in the specifications. The sum shall be repaid to the Contractor without interest within thirty (30) days after certification by the Commissioner to the Comptroller that the Contractor has faithfully performed all his obligations hereunder."

"Notice by the Commissioner to the Contractor to repair, replace, rebuild or restore such defective or damaged work shall be timely if given not later than ten (10) days subsequent to the expiration of the one-year period or other periods provided for herein.

"If the Contractor shall fail to repair, replace, rebuild or restore such defective or damaged work promptly after receiving such notice, the Commissioner shall have the right to have the work done by others in the same manner as is provided for the completion of a defaulted contract, under Article 48 hereof and to deduct the cost thereof from the amount retained hereunder. The balance, if any, shall be returned to the Contractor without interest.

"If the amount so retained be insufficient to cover the cost of such work, the Contractor shall be liable to pay such deficiency on demand by the Comptroller.

"The Engineer's certificate setting forth the fair and reasonable cost of repairing, replacing, rebuilding or restoring any damaged or defective work when performed by one other than the Contractor shall be binding and conclusive as to the amount thereof upon the Contractor."