



Survey of NPDES Compliance Monitoring in Nine States

Abstract

In April 1996 the Washington State Department of Ecology conducted a survey of nine states regarding their NPDES compliance monitoring programs. This report summarizes findings from the survey.

Each state surveyed affirmed it has a program of compliance inspections consistent with federal regulations for NPDES delegation. The range of activities pursued by individual state agencies in implementing their programs varies considerably. Several states perform mixing zone analyses, but there is no consistency in the level of effort. Toxicity or bioassay testing is conducted to some degree by most states, and many states consider this test the most important in an inspection. Costs for compliance inspections have not been calculated by the states, and funding sources vary. All states responded that compliance inspections are conducted from regional or district offices, with the exception of Washington, which also conducts inspections from a central office.

Budget constraints are forcing a number of states to shift the emphasis away from compliance programs to less costly alternatives. Technical assistance programs appear to be the most common alternative to compliance inspections, although there is little empirical evidence on the effectiveness of such programs. Many states are applying a "watershed" or basin approach to their permitting and inspection activities. Automated data entry from permittees and regional offices to centralized offices is being tried by some states.

Purpose

The Washington State Department of Ecology (Ecology) is reviewing agency water quality compliance strategies with the goal of improving program efficiency and strengthening our partnership with National Pollution Discharge Elimination System (NPDES) permittees. Of particular interest is the agency's enhanced compliance monitoring program, which has historically been cost and labor intensive. One issue is whether the scope and number of inspections are warranted in a time of decreased funding and changing national and state policies. In response, the agency needs to identify viable alternatives to the existing compliance monitoring program that will result in more cost-effective government oversight.

To meet this objective Ecology sought information from other state environmental agencies to:

- Gain a better understanding of the general level-of-effort spent on water quality inspections
- Compare compliance inspection programs to identify efficiencies in program implementation
- Explore innovations to established compliance inspection methods

Background

Successful implementation of the NPDES program has required access to reliable and timely data. Under the authority of the Clean Water Act, one cost-effective alternative for agency collection of data has been the use of self-monitoring data generated by the permittee. The regular submission of these data has been crucial in evaluating compliance with NPDES permit limits, toxicity limits, and water quality standards. In addition, under 40 CFR 123.26, state programs are directed to:

“... have inspection and surveillance procedures to determine, independent of information provided by regulated persons, compliance or non-compliance of applicable program requirements.”

In response to these statutory requirements, Ecology signed a Memorandum of Agreement with EPA establishing an NPDES Compliance Assurance Program that included language for Compliance Evaluation Sampling (Class II) Inspections.

In Washington State there are two types of NPDES inspections:

- Class I inspections, which are primarily a visual facility inspection with little or no sampling
- Class II inspections, which include (at a minimum) independent, representative sampling across the facility and can include extensive priority pollutant analyses, bioassessments and dilution zone modeling

These inspections provide data and information for Ecology's Water Quality Program.

Compliance inspections are scheduled as part of a five-year comprehensive watershed planning cycle. "Command-and-control" policies have been de-emphasized, and have been enhanced with policies encouraging partnership, pollution prevention, and technical assistance. A Permit Partnership Program was initiated in 1994, and includes an advisory committee to the agency for implementing NPDES and State Waste Discharge Programs. With this new strategy comes the challenge to design a program that is cost effective, is responsive to the new partnership standards, and yet meets the statutory requirements of the Clean Water Act.

The Survey

Ecology surveyed nine state environmental agencies during April 1996. Eight of the selected states have been delegated authority by EPA to enforce provisions of the Clean Water Act. These include California, Florida, Illinois, Michigan, New York, North Carolina, Oregon, and Washington. The ninth state, Massachusetts, is non-delegated, but shares responsibility for compliance inspections with EPA Region I.

A letter was sent to each state explaining the purpose of the interview, how it would be conducted, and the questions that would be asked. In pre-interview confirmation calls, we learned many states did not recognize or use the term "Class II" inspection; however, it was made clear the kind of inspection we would be discussing. The interview consisted of a nine-part questionnaire that solicited information on the agency's compliance inspection program, changes that have occurred in that program, and any new initiatives that the state may be implementing.

Results

Question # 1 - Does your NPDES Compliance Assurance Program specify compliance inspections, including Class II inspections?

STATE	COMMENT
California	No. Compliance inspections limited to grab samples collected yearly at major dischargers, once every permit cycle at minor dischargers.
Florida	Yes. Comprehensive sampling and testing conducted on a five-year cycle.
Illinois	Yes. Major dischargers subject to comprehensive sampling every five years.
Massachusetts	No. Does not have NPDES delegation, and defers to EPA to conduct compliance inspections.
Michigan	No. Although limited parameters sampled every five years, samples usually taken from the permittee's composite sampler.
New York	No. 24-hour composite sampling not routinely done.
North Carolina	Yes. Composite samples taken once per year from major facilities, once every five years from minor facilities.
Oregon	No. 24-hour composite sampling not done, sampling limited to conventional parameters.
Washington	Yes. Major and minor dischargers histories are reviewed and facilities are subject to comprehensive inspections on five-year cycle.

All the states stated they have a program of compliance inspections consistent with federal regulations for NPDES delegation. The range of activities for implementing states' programs varies considerably. Only three states regularly conduct inspections that could be considered comparable to Washington State's Class II inspections.

Florida, North Carolina, Illinois and Washington have well-developed compliance inspection programs with comprehensive sampling and testing of multiple parameters over a 5-year cycle. Florida's program includes sediment samples, toxicity testing, mixing zone analysis, and in-stream biological impact assessments. North Carolina's program conducts composite sampling every year at major facilities and every five years at minor facilities. Illinois' program includes cyclical bioassays and design analysis. In Washington industrial facilities are targeted for annual compliance inspections without sampling, and inspections with limited independent sampling, every other year. Inspections with limited sampling usually occur every five to ten years.

Other states, such as Michigan and New York, maintain less comprehensive programs and initiate review of selected parameters dependent on staff resources or site characteristics. New York

shares some compliance monitoring responsibilities with EPA. Generally these states focus on conventional permit-limited parameters. California and Oregon support minimal compliance verification inspection programs. Massachusetts, a non-delegated state, takes only limited samples, since the bulk of their verification program is conducted by EPA Region I.

Question # 2 - How extensive are your state's Class II inspections? Do they include:

- composite samplers set up by the inspectors?
- samples taken for priority pollutant metals?
- samples taken for priority pollutant organics?
- fate of toxicants across treatment system analysis?
- samples taken for bioassay(s)?
- receiving environment sediment sampling?
- use of the Whole Effluent Toxicity (WET) rule (40 CFR 122.44[d]&[e])?
- mixing zone analysis to assess impacts on receiving waters?
- use of other performance standards?

STATE	COMMENT
California	Conventional permit parameters sampled; metals, organics, bioassays, and dilution zones not generally analyzed; sediments sampled only if required by permit.
Florida	Conventional permit parameters, priority metals and organics, bioassays, mixing zones, and instream biological impact assessed; sediments and sludge collected on a case-by-case basis.
Illinois	Conventional permit parameters, bioassays, and treatment plant design analyzed; priority pollutant metals and organics analyzed only if the plant has industrial contributors.
Massachusetts	Conventional parameters, bioassays, and sediments sampled on occasion.
Michigan	Conventional permit parameters sampled; priority metals and organics, bioassays and sediments taken only on a case-by-case basis.
New York	Analyses mirror permit parameters; priority metals and organics, bioassays, and sediment collection performed on a case-by-case basis.
North Carolina	Conventional analyses and bioassays performed; priority pollutants and sediment samples not taken.
Oregon	Conventional permit parameters analyzed; bioassays done on occasion as part of studies separate from inspections.
Washington	Conventional permit parameters, priority metals and organics sampled; receiving water, sediment bioassays, mixing zones, and engineering design evaluated case-by-case.

Similar to the scope of compliance verification programs, the range of parameters tested varies considerably from state to state

Composite Samples - Florida, New York, Washington (at municipal facilities) and North Carolina routinely conduct independent composite sampling. Illinois, Oregon, and Massachusetts routinely split samples from the permittee's compositor, as does Washington at industrial facilities. Several states set up independent composite samplers if conditions warrant or there is a history of non-compliance.

Priority Pollutants - Florida and Washington (at municipal facilities) are the only states that routinely sample for priority pollutant metals and organics. New York checks priority pollutants when the permit is up for renewal or when significant changes have taken place at the facility. Most states sample priority pollutants dependent on a number of factors, including: suspicion of non-compliance; the extent of industrial contribution; regional staff resources; and inclusion in the NPDES permit.

Fate of Toxicants - Determining the fate of toxicants across treatment plants using mass balance algorithms is typically not done. EPA Region I reported they do these analyses infrequently.

Bioassays - Toxicity testing is conducted to some degree by all states except California. Florida, Illinois, and North Carolina conduct bioassays in conjunction with their 5-year permit renewal cycle. Washington recently closed its bioassay lab and now occasionally contracts with private laboratories for bioassays. As a result, bioassays are now conducted only for facilities discharging specific contaminants. Oregon conducts bioassays as part of independent studies. Massachusetts, Michigan, and New York conduct bioassays on a case-by-case basis. Bioassays are generally seen as important to compliance verification, and several states express the opinion that it was the most important verification tool.

Sediments - Receiving water sediment samples are not routinely taken by any state, although Florida plans to begin routine sediment sampling later this year. Illinois, Michigan, New York and Washington take sediment samples on a case-by-case basis. California takes samples when they are included in the permit. California and Washington are the only states that have state marine sediment standards.

Whole Effluent Toxicity (WET) Rule - Florida, Illinois, Michigan, North Carolina, Oregon and Washington all make use of either EPA WET rule (40 CFR 122.44[d][e]) or state rules, usually for permit applications and compliance monitoring. EPA Region I includes the WET rule in all permits. Oregon only occasionally uses the WET rule. California stated that EPA is currently promulgating toxic rules for the state.

Mixing Zone Analysis - Several states perform mixing zone analyses. Florida has the most comprehensive program, using both dye studies and models to evaluate dilution factors for NPDES dischargers. Illinois uses mixing zone studies for permit applications and in its five-year

renewal cycle. New York analyses are done separately from compliance inspections. Washington verifies the results and models of mixing zone analyses provided by permittees.

Other Performance Standards - Some states use biological performance standards in compliance evaluations. Florida uses receiving water organism indices and stream condition indices, which include collection of macro-invertebrates and full chemistry analysis of the receiving water. New York sometimes works with the state Fish and Wildlife Department to determine sustainability of receiving water biota. EPA Region I occasionally uses in-stream standards. Washington is developing a model for technical performance based permits as part of its pollution prevention program.

Additional Responses - Only Florida has specific facility efficiency standards. Florida, Illinois and Washington perform engineering analysis of treatment plant performance. Florida and Illinois have their own state sludge standards. Florida and North Carolina have developed independent toxicity testing rules.

Question # 3 - Does your state compare priority pollutant discharges with water quality criteria?

STATE	COMMENT
California	Yes, when available.
Florida	Yes, results of priority pollutant scans are compared with water quality criteria.
Illinois	Yes, when available.
Massachusetts	No.
Michigan	Yes, when available.
New York	Yes.
North Carolina	Yes, when available.
Oregon	Yes, when available.
Washington	Yes, comparisons included in compliance monitoring reports.

All states except Massachusetts compare effluent priority pollutant discharges with water quality criteria. Massachusetts defers to EPA, which uses federal criteria. California, Michigan, New York, and Washington have state water quality standards. Florida, Illinois, North Carolina, and Oregon use EPA water quality criteria. Illinois uses the discharger's whole effluent for water quality criteria comparisons. Oregon makes comparisons if it is required by the permit.

**Question # 4 - What is the range of costs for conducting Class II inspections?
Does your state have a strategy or any initiatives to reduce costs?**

STATE	COMMENT
California	Costs have not been fully estimated. The main strategy for reducing costs in the regions has been a reduction in frequency and quality of inspections. Costs are covered by fees, general funds, and federal 106 grants.
Florida	Costs have not been estimated, and there have been proposals to cross train employees between programs to save money. Compliance inspections are financed through fees and federal 106 grant funds.
Illinois	Costs have not been calculated, and no strategy to reduce costs is under consideration. Inspections are financed through state general funds and federal 106 grant funds.
Massachusetts	The state incurs no base cost, except for inspections done beyond those done by EPA, which can cost several thousand dollars. To reduce costs, sampling has been limited to permit parameters and the number of inspections has been reduced.
Michigan	Costs have not been quantified, but what costs there are have been reduced so there is no longer a five-year cycle on major dischargers. Inspections are funded by the general fund and EPA program grants.
New York	Costs are not known, but the state is trying to reduce costs by targeting permittees with poor compliance histories and potential for the most environmental harm. Funding is approximately 60% permit fees, 40% EPA grant.
North Carolina	Costs are unknown and there are no strategies to reduce costs. Compliance inspections are funded through permit fees with some financing from the general fund.
Oregon	Costs are not known and there is no initiative to reduce costs. Compliance inspections are NPDES permit fee funded.
Washington	Laboratory costs have been reduced from an average of \$15,000-\$20,000 per inspection to \$4,000 to \$10,000 in most cases. Major municipal dischargers are inspected, on average, every ten years. Inspections are funded through permit fees.

Overall, the costs for compliance verification inspections have not been calculated by the states. Funding sources for programs differ considerably from state to state.

California - California's costs are covered by permit fees, state general fund, and federal CWA 106 grant funds. The state's regional offices do not provide information on their costs. Its system of independent regional water quality boards results in varying costs for compliance inspections across the state.

To contain costs the state is conducting a study to improve the efficiency of regional inspection efforts. A pilot project for electronic transfer of data from the regions to the central office as well as automatic entry of permittee self-monitoring is under development. The main strategy for reducing costs in the regions has been a "reduction in frequency and quality of the inspections."

Florida - Florida could not provide a cost estimate due to the number of inspections and the general decentralization of inspections to agency regional authorities. The program is funded primarily through permit fees and federal CWA 106 grants. There have been proposals to cross train employees between programs to save money.

Illinois - Illinois has never done a cost calculation for the compliance inspection program, and its costs are folded into the overall budget for the entire agency. Financing comes from the state's general fund and federal CWA 106 grants.

Massachusetts - Because Massachusetts is not delegated, the state incurs no base cost of compliance inspections, other than what they do to augment the inspections conducted by EPA.

Michigan - The state has not attempted to quantify the cost of compliance inspections directly, but has made some estimates of staff time. Financing is through the state's general fund and EPA program grants. The compliance inspection program budget is a component of the agency's Water Quality Division budget and is not in competition with other programs. The compliance inspection program has a high priority within the agency, but budget constraints have forced a reduction of five-year cycle inspections for major facilities.

New York - New York does not know what the costs are for their compliance inspection activities. Funding is approximately 60% permit fees and 40% EPA grant. The compliance inspection budget is folded into the budget of the individual regions where inspections take place.

Initiatives to reduce costs include targeting expensive activities to the most appropriate permittee, i.e. those with poor compliance histories and potential for the most environmental harm. It is believed the development of an inspection and sampling computer program for the storage of data may save money. The respondent said that the compliance program is important to the agency and the frequency of inspections will be maintained.

North Carolina - Costs for compliance inspections range from \$100 for a simple walk through to several thousand dollars for a compliance sampling inspection with bioassays. The compliance inspection program is funded principally through permit fees, although some funding comes from the state's general fund.

Oregon - The state has no clear idea of the total costs for a compliance inspection. Funding for the compliance program comes mostly from NPDES permit fees, with efforts being made to minimize the costs to the state's general fund.

Washington - A typical inspection costs approximately \$10,000 in staff time and \$4,000 to \$9,000 in laboratory costs. Laboratory costs for inspections at industrial facilities average \$1,000 for pulp mills to \$1,800 for oil refineries, since there is little independent sampling. Substantial savings in laboratory costs have been realized by reducing the number of analytes, number of samples, quality assurance samples, and bioassays. Overall the frequency of inspections has been reduced.

Question # 5 - Are Class II inspections conducted from regional offices or central offices? Are the inspections coordinated with other permit-based activities?

STATE	COMMENT
California	Regional offices - integrated with other facets of permit-based activities, but not coordinated with TMDLs or multimedia inspections.
Florida	Regional offices - with oversight from the central office, coordinated with enforcement, and TMDL starting this year.
Illinois	Regional offices - coordinated with permit reissuance, TMDLs, enforcement, pretreatment programs, and occasionally with other media.
Massachusetts	Regional laboratory - coordinated with enforcement actions permit reissuance, TMDLs, pretreatment, and multimedia case-by-case basis.
Michigan	District offices - with technicians collecting the samples; coordinated with TMDLs, pretreatment programs, enforcement, and to some degree with multimedia assessments.
New York	Regional offices - coordinated with enforcement action pretreatment, and to some extent with TMDLs and multimedia assessments.
North Carolina	Regional offices - coordinated with other permit-based activities.
Oregon	Regional offices - but compliance inspections not coordinated with other activities.
Washington	Compliance inspections conducted out of both a central office and regional offices, and coordinated with enforcement, TMDLs, permit reissuance, and pretreatment programs.

All states except Washington conduct compliance inspections from regional or district offices. Although all states (with the possible exception of California) have some degree of central oversight, this varies considerably. Coordination of compliance inspections with other permit activities also varies widely.

California - California's individual Regional Water Quality Control Boards conduct all compliance inspections. These regional offices are largely autonomous, supervised by a board consisting of nine members, each appointed by the governor. Regions receive minimal oversight from the state's central office of the Division of Water Quality. Coordination with other permit activities is dependent on internal regional policies and consequently is highly variable. Most regions coordinate compliance inspections with enforcement actions. Some regions coordinate inspections with pretreatment programs.

Florida - Compliance inspections are performed by regional offices, with strong oversight from the agency's central office. Headquarters plans where the inspections within individual regions will take place, conducts inspector training within the regions, and audits all regions to ensure the inspections are being done correctly. Compliance inspections are coordinated with enforcement actions and TMDLs.

Illinois - Compliance inspections are done exclusively by regional offices, and are coordinated with permit reissuance. Inspections are coordinated with enforcement actions, TMDLs, pretreatment programs, and occasionally with multimedia programs.

Massachusetts - Inspections are done by the EPA Region 1 regional laboratory, and are usually coordinated with enforcement actions and TMDLs. They are coordinated with multimedia efforts and pretreatment evaluations on a case-by-case basis.

Michigan - District offices conduct all inspections of NPDES permittees. Specialized technicians take the samples and permit managers evaluate the results. They are generally coordinated with enforcement action, TMDLs, pretreatment evaluations, and (to a lesser degree) multimedia initiatives.

New York - Compliance monitoring is conducted by regional staff, although EPA does conduct performance audit inspections and collects some 24-hour composite samples. Inspections are coordinated primarily with enforcement actions and pretreatment evaluations. To a limited extent they are coordinated with TMDLs, and more coordination is expected in the future. There is some coordination with multimedia, but it is on a targeted basis and is not a full surveillance activity.

North Carolina - The state responded that inspections are conducted by regional offices and are not coordinated with other permit activities.

Oregon - The state responded that inspections are conducted by regional offices and are not coordinated with other permit activities.

Washington - Inspections are conducted from both regional offices and a central office, with the latter conducting more comprehensive or enhanced inspections. Inspections are coordinated with other permit-based activities through a watershed scoping process. An emphasis has been recently placed on coordinating facility inspections with TMDL studies. The state is also considering coordinating water quality inspections with multi-media activities.

Question # 6 - Has your state shifted or is your state shifting its emphasis from Class II inspections and enforcement to self-monitoring and self-compliance?

Does your state allow self-monitoring? If yes, under what conditions?

How is self-monitoring verified?

STATE	COMMENT
California	Yes, and because of a permit renewal backlog, the quality and frequency of inspections has been reduced. Compliance inspections, lab inspections, and citizen complaints serve as verification.
Florida	No, although all permittees self-monitor. Self-monitoring is reviewed from DMRs and is verified through inspections.
Illinois	No, there has been no shift toward self-monitoring and no shift in funding priorities. Verification is through compliance inspections.
Massachusetts	Yes, there has been a reduction in the number of inspections. Verification in addition to EPA depends on compliance inspections, lab QA, and routine inspection of log books.
Michigan	Yes, less rigorous oversight and less monitoring are required for smaller facilities. Self-monitoring is verified by assessment of data and by compliance monitoring.
New York	Yes, emphasis has shifted away from enforcement to self-monitoring and technical assistance. Self-reporting is verified by state sampling. The program relies on "good environmental consciousness."
North Carolina	No, the state is expecting to continue conducting as many inspections as it has in the past.
Oregon	No, but future budget tightening may affect inspections. Self-monitoring data are verified by reviewing reports and by limited compliance monitoring.
Washington	Yes, there has been a shift in emphasis from compliance inspections and enforcement to self-monitoring and self-compliance. The submission of self-monitoring data is required.

Budget constraints are forcing a number of states to shift their emphasis away from compliance programs to less costly initiatives. Most states have traditionally relied to a degree on self-reporting, but in the last few years it appears there is a trend toward increased reliance on this approach to acquiring data. However, compliance inspections are still the principle method for verification of the accuracy and representativeness of self-reporting.

California - The state's individual regions have shifted resources from compliance inspections to permit renewal due to a backlog. One region has recently placed more emphasis on enforcement due to some well-publicized violations. Inspections and citizen involvement are the main verification processes for self-monitoring. Citizens are allowed to collect and submit samples for enforcement purposes. There has been and remains a heavy reliance on self-monitoring due to resource limitations.

Florida - There has been no change in the state's emphasis on compliance inspections and no move to shift resources from compliance inspections to other programs. All permittees self-monitor, and verification is accomplished by multiple inspections and review of DMRs.

Illinois - The state has not shifted from compliance inspections to self-monitoring, nor have they shifted funding priorities. Permittees have been generally cooperative with the existing program.

Massachusetts - There has been a shift from compliance inspections to self-monitoring due to budget concerns, lab reductions, and staff cuts. EPA has always relied heavily on self-monitoring. Verification of self-monitoring depends on EPA compliance inspections, lab quality assurance, and inspection of DMRs. EPA expressed a desire to conduct more compliance monitoring, but cited resource constraints as a limiting factor.

Michigan - No shift of emphasis was indicated. The state has a strong self-monitoring program which is carried out by all NPDES permittees. Less monitoring and less rigorous oversight is required for smaller facilities due to their smaller potential impact on the environment. Self-monitoring is verified by independent compliance inspections. Permittees are also given the option of engaging in a self-auditing program, where they are granted disclosure immunity for prompt reporting and correction of permit violations.

New York - Driven by reduced resources and increased complexity of inspections, New York is shifting its emphasis from compliance inspections to a program called the "Integrated Compliance Strategy System." The thrust is to turn to self-evaluation by permittees in a strategic manner. The state will focus on providing technical assistance to permittees instead of surveillance. The hope is that the agency will provide an incentive for self-auditing and correct unacceptable activities by both the promise of technical assistance and by threatening further investigations if trend analyses reveals continuing problems. The plan relies heavily on the "good environmental conscience" of the permittee.

North Carolina - The state does not plan any changes to their present compliance inspection program. Toxicity testing at facilities occurs quarterly unless the facility fails, in which case

testing is increased to once per month. Permit limited parameters are randomly tested. The lab certification process is also seen as part of the verification process.

Oregon - Oregon does not anticipate shifting resources away from compliance inspections although future budget constraints may require a change. Self-monitoring is allowed and is verified by reviewing DMRs and limited compliance inspections.

Washington - Washington is emphasizing self-monitoring and self-compliance compared to frequent inspections and enforcement. The state is exploring a Performance Partnership Agreement with EPA that will drive even greater reliance on permittee accountability. Self-monitoring samples are required to be analyzed by accredited laboratories. Data verification occurs through independent inspections.

Question # 7 - Does your state offer any incentives for self-monitoring (e.g. reduced permit fees)? If so, do cost savings from reduced permit fees or other incentives offset the cost of self-monitoring for the permittee?

STATE	COMMENT
California	No, except reduced monitoring is allowed in some cases if frequent monitoring is shown not to be necessary.
Florida	No, there are no incentives offered for self-monitoring.
Illinois	No incentives are offered for self-monitoring. The state has no permit fees.
Massachusetts	No monetary incentives are offered. If the permittee complies with the permit, then there is no enforcement.
Michigan	No monetary incentives are offered, but reduction in monitoring requirements possible. Monitoring frequency is established in each permit.
New York	Yes, there are industrial users fee programs, voluntary compliance incentives, and self-audit disclosure programs.
North Carolina	No incentives are offered.
Oregon	No incentives are offered.
Washington	Not yet. Self-monitoring and submission of discharge monitoring reports by permittees are required in accordance with state and NPDES permits. Compliance incentives are being considered.

With the exception of New York and Michigan, few states offer substantial incentives for self monitoring; consequently there is little evidence of cost saving to the permittees. Some states implied that they view the permit fee system and other permit requirements as the permittee's obligation under the law and that these statutory requirements are incentive enough.

California reduces monitoring if it can be shown not to be necessary, but this happens rarely. Michigan, in addition to self-auditing, may offer reductions in monitoring requirements to facilities with a good history of compliance. New York has some voluntary control incentives that reduce exposure to civil fines and penalties. New York also has proposed industrial users pay a special fee for the inspection program, one-half of which would be returned to the local control authority. New York also has a self-disclosure program that reduces penalties for those who find, report and correct their violations. Washington is considering a number of compliance incentive strategies, including performance based permits, pollution reduction trading, enforcement flexibility, economic incentives, and pollution prevention assistance.

Question #8 - Describe alternative approaches your state has implemented to fulfill state compliance monitoring needs? Have these entirely or partially replaced the need for Class II Inspections? Have they proved effective in ensuring permit compliance?

STATE	COMMENT
California	Pollution prevention programs have had good feedback, and pretreatment programs have been correlated with improved water quality.
Florida	A pilot project for providing technical outreach was well received, but is not believed sufficient to replace compliance inspections.
Illinois	The need for compliance inspections has not been replaced.
Massachusetts	Technical assistance programs have shown some tangible results, but there are no data that indicate alternative programs could replace compliance inspections.
Michigan	There have been initiatives in technical assistance and pollution prevention. There has been no reduction in surveillance inspections.
New York	Alternatives include technical assistance, multimedia inspections, and pollution prevention. They have been effective, but there is no indication that they could replace compliance inspections.
North Carolina	A technical assistance program has been underway for eight years and an office of waste reduction pollution prevention is eight years old, but there are no data to show the effectiveness of alternative programs.
Oregon	No alternatives have replaced the need for compliance inspections, although technical assistance has proven effective.
Washington	Washington is experimenting with technical assistance, multimedia, and pollution prevention to augment traditional compliance inspections, but it is too early to tell if these alternatives can replace compliance inspections.

Technical assistance programs appear to be the most common alternative to compliance inspections. Although little empirical evidence exists, there is much anecdotal evidence that technical assistance is effective in promoting compliance. Other alternatives most frequently mentioned include pollution prevention programs and lab certification. Respondents emphasized that none of these initiatives is thought to replace the need for frequent and comprehensive compliance inspections.

All states except California have technical assistance programs. Florida's pilot project has been successful in bringing facilities back into compliance. In Illinois a federal technical assistance grant helped set up a program to assist in operator training, and technical assistance is incorporated into every inspection. In Massachusetts technical assistance programs are thought to have produced tangible results in promoting source reduction, recycling, and hazardous materials reduction. Michigan's technical assistance program is believed effective, but there are no data yet to substantiate this assessment. New York and Oregon also reported that technical assistance programs have been effective. Oregon reports permittees are less hesitant about providing information, with the advent of technical assistance. Washington is focusing on providing technical assistance (i.e., problem identification and resolution), especially to smaller municipal wastewater treatment plants. Studies quantifying source loading to facilities have been conducted.

Pollution prevention or pretreatment initiatives have been started in five states. With the exception of North Carolina these initiatives are relatively recent, so there is as yet no indication of their effectiveness. North Carolina's pollution prevention program is eight years old and appears to have had some success. California claims a correlation between their pollution prevention program and improved water quality.

Other initiatives include an Illinois sampling program that produces 9,000 to 10,000 reconnaissance (visual) inspections per year. The respondent claimed that these reconnaissance inspections allow the state to shift resources away from facilities with good compliance histories and target facilities with poor histories. Illinois also has a multimedia amnesty program for small businesses. Although the success of these programs has not been directly measured, there has been significant improvement in water quality as judged by removal of streams from the 305(b) list. New York's initiatives include multimedia evaluations and a site inspection approach which allow a more thorough and routine evaluation of NPDES facilities.

Question #9 - Describe any additional approaches your agency has taken to maximize the effectiveness and efficiency of compliance monitoring efforts?

STATE	COMMENT
California	Some regions are emphasizing compliance inspections for the purpose of enforcement.
Florida	An additional approach has been the instream analysis of NPDES permit discharge impacts on receiving waters.
Illinois	Inspections have been shifted away from plants with good histories to those with bad histories, and resources have been shifted from majors to minors in targeted watersheds.
Massachusetts	--
Michigan	The overall approach is to provide an adequate degree of enforcement and a balanced program.
New York	The state has implemented an electronic data interchange to transfer data from permittees, and a Water Integrated Compliance System to target significant violators.
North Carolina	The compliance monitoring inspectors have undergone training. There has been documentation of the compliance monitoring process.
Oregon	--
Washington	The state recently developed a "Compliance Inspection Checklist" to ensure consistency in definitions, priorities, and procedures used in compliance inspections with or without sampling.

Florida's attempts to maximize compliance inspection effectiveness include in-stream analysis of receiving water biota to evaluate the impact of NPDES discharges. Illinois believes they will have success shifting resources from major to minor facility inspections in targeted watersheds. They are also implementing a basin approach to water quality management. Massachusetts has also begun implementing the watershed approach. Michigan stresses a balanced program with adequate enforcement and a broad range of other initiatives to encourage compliance. New York has built an Electronic Data Interchange (EDI) system to help transfer data from the permittee to the agency. New York's Water Integrated Compliance System, a policy by which significant violators are targeted, has demonstrated some measure of success. North Carolina has stressed enhanced inspector training. Oregon is reviewing their program to identify its most successful components.

Conclusions

The following conclusions are based on two sources: (1) information presented in summary fashion in the survey report and distributed to all participants, and (2) personal opinions and anecdotes of interviewees not captured in the report. This latter information did not fit well in the question/answer report format, but is still valuable for discussion purposes.

Several common themes stand out from the interviews. First, it is apparent many environmental agencies across the country must operate with decreasing budgets, and NPDES compliance verification has been a target for cuts. The majority of people interviewed have acknowledged reductions in staff or resources, resulting in a reduction in compliance inspection activities. Some stated that these cuts are approaching a point of jeopardizing the viability of their programs.

A second theme is that the scaling back of compliance inspections on the part of some agencies has occurred mostly by default, with little planning for what will replace them. The process appears to be one of attrition, with the cumulative effect of potentially undermining the entire program.

Many states are looking at alternatives to traditional inspections, but none has yet found a replacement for comprehensive verification. Self-monitoring alone was viewed by the majority as insufficient to serve as the basis for compliance assurance. For those that did offer alternatives, they admit there are liabilities when compared to traditional programs. There is little data on the new programs' effectiveness. However, most non-conventional approaches are not well defined and still in the nascent stage of implementation, so it is too early to say if they will be cost-effective.

Ideas

Independent, comprehensive inspections of NPDES permitted facilities were identified in this survey as the best method for verifying permittee self-reporting.

Substantial cost savings may be realized with little overall reduction in permittee compliance if inspection resources are targeted away from facilities with proven good compliance and permitting histories. These would include those facilities enjoying performance-based reductions in monitoring and reporting frequencies. We should focus on helping solve problems in facilities with poor histories or those undergoing significant change. We should work at the local level, and technical assistance should be a part of every Ecology inspection.

In place of sequential inspections, we should focus resources towards facilities that have an increased risk of non-compliance. These targeted facilities include:

- Permittees with histories of non-compliance, especially those under an Administrative Order
- Treatment plants with large variances in effluent discharge concentrations
- Plants with antiquated or inefficient design
- Facilities in communities experiencing demographic changes
- Municipal facilities with a large number of industrial contributors or that have gained a new industrial contributor
- Industrial facilities undergoing significant changes in processes (e.g., pulp and paper mills, refineries)
- Facilities that discharge into sensitive receiving waters

Other innovations that could potentially be applied in Washington State include:

- Encourage the use of receiving water organism (macro-invertebrates) and stream condition indices to derive in-situ data on the impact of permitted discharges.
- Establish use of an automated data transfer for larger facilities, as is done in New York, and being tested in California.
- Develop an extensive reconnaissance program, as is done in Illinois, to focus on “worst-offenders.”
- Establish a self-auditing program, with possible immunity for prompt reporting and corrective action.

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