
RESULTS FROM MONITORING COMPLIANCE AND ENFORCEMENT, NORWAY 1993RØDLAND, GRO¹ and MILLER, ANGELA²¹ Head of Department² Senior Executive Officer

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SUMMARY

This paper covers the Norwegian State Pollution Control Authority's (SFT) strategy for selecting enterprises to be inspected and methods of inspection. Results from the inspections carried out in 1993 are reported.

1 STRATEGY FOR SELECTION OF ENTERPRISES TO BE INSPECTED AND METHODS FOR MONITORING COMPLIANCE

In Norway, 1500 enterprises have been granted discharge permits. The permits are usually multimedia, and cover water, air, noise and industrial and hazardous waste. Other minor enterprises are controlled only through regulations.

It is not adequate, nor necessary to inspect all the enterprises at the same frequency or with equal thoroughness. In order to get the best possible effect from our limited inspection capacity, we have to carefully select which enterprises to inspect or audit.

1.1 Strategy for selection of enterprises

Our strategy for selecting enterprises to be inspected is based on the principle that our resources should be used where they will give the best results for the environment. When choosing the enterprise the following criteria are used:

1. Enterprises which contribute to environmental problems in areas which are given high priority by environmental authorities.
2. Enterprises with a great potential or risk of hazardous discharges.
3. Suspicion of violations.
4. Geographic areas with special environmental problems.
5. Preventive considerations.

For 1993 these topics/enterprises were given priority:

1. Hazardous waste.
2. Hazardous substances, especially potential discharges of heavy metals to municipal sludge.
3. Other environmental problems which were given national or international priority to solve, as described in international agreements.
4. Enterprises with a high risk or potential for hazardous discharges as classified in the control classes.
5. Serious violations in 1992.
6. Reports of violations or suspected violations (self-reported or reported by neighbours, other authorities, etc.).

1.1.1 Re. 4 Control classes

All the 1500 enterprises that have been granted permits are divided into four control classes. The classification is based on the potential emissions from the enterprise and their toxicity. The environmental sensitivity (air and water quality) of the surroundings are also taken into account. The most polluting enterprises are placed in class 1, which includes 50 to 60 enterprises/plants (e.g., chemical industry, pulp and paper industry, aluminium industry, ferro alloy industry, large foundries, off-shore oil installations). Small enterprises producing only a limited amount of pollution are placed in class 4 (e.g., small dairies, slaughterhouses and small asphalt plants).

A schedule for monitoring compliance for the enterprises depending on control class has been worked out. This is outlined schematically in table 1.

Table 1. Enterprises With Permits: Schedule for Compliance Determination

Class	No. of Enterprises	Reports to SFT	Inspections Frequency	Audit Frequency Source Testing
1	50	Once a year	Annually	Once every 3rd year
2	100	Once a year	Once every 2nd year	Once every 6th year
3	350	Once a year	Once every 2nd-3rd year	
4	1000		When complaints type of discharge	
Total	1500			

1.2 Methods for monitoring compliance

Compliance is monitored through three different methods, self-reporting to SFT, inspections and audits.

1.2.1 Self-reporting

For enterprises in control class 1, 2 and 3, the permit includes a requirement to establish and maintain a well defined self-monitoring program. Once a year they must submit an account of their emissions to SFT. This report should include their total emissions, any discharges exceeding the discharge limits or other violations. The reasons for violations must be given together with an explanation of corrective actions taken to avoid recurrence.

Through the reports submitted to SFT, we get a lot of useful information about the current situation at the enterprises at a fairly low cost for the authorities. The quality of the information can, of course, be discussed. The information given in these reports is checked at inspections and audits. There are, however, few cases uncovered during inspections of under reporting of discharge or violations in connection with self-reports.

1.2.2 Inspections

Inspections are normally a one day unannounced visit at the enterprise. The total work load pr. inspection is 3 to 5 days.

The objectives of an inspection are:

- To check whether the enterprise is in compliance or not
- To collect evidence in the case of non-compliance, to ensure the necessary enforcement actions.
- To ensure high quality of the self-reported data
- To check that a system for internal control is established

- To demonstrate that the authorities take compliance seriously

An inspection is a useful method to verify compliance with the specific requirements in the permit. For minor, uncomplicated enterprises it may also give a satisfying evaluation of the preventive actions taken by the enterprise in order to avoid accidental discharges and the environmental management system. For greater, more complex enterprises, inspections can only be used to verify compliance for parts of the enterprise or permit. Audits will have to be used in order to evaluate the environmental management system.

1.2.3 Environmental audits and source testing

Environmental audits and source testing are used not only to monitor compliance but also to evaluate the environmental management system in the enterprise. The audits are normally carried out by 2 to 3 inspectors who stay in the field/at the enterprise for 4 to 5 days. The total time involved in an audit varies from 3 to 7 weeks. The time consumption connected with an audit makes it very important to choose carefully when and where an audit is the right tool for monitoring compliance.

A written report is always sent to the enterprise following an audit or an inspection. The enterprise is reminded of their duty to immediately undertake necessary corrective actions in order to get into compliance if violations are revealed. Both during audits and inspections there may be findings which can not be considered as non-compliance, but where SFT finds it necessary to point out possible improvements. These findings are classified as observations. The inspection or audit is followed up by asking or legally imposing the enterprise to report the corrective actions done in order to be in compliance and to give their evaluation of the observations.

2 RESULTS

The inspection capacity was in 1993 as illustrated in table 2.

Audits were used in high risk enterprises and in order to go deeper into priority problem areas

Table 2. Inspections and Audits in 1993

	Inspections	Audits
Control Class 1	32	30
Control Class 2	30	9
Control Class 3	109	1
Control Class 4	84	3
Hazardous waste handlers	32	(5)
Local authorities (wastewater treatment plants and waste disposal sites)	1	11
Controlled only by regulations	25	
Total	313	54

such as hazardous waste treatment and heavy metal in municipal sludge. A total of 54 enterprises were audited. Thirty nine of the audits were undertaken in enterprises in the 2 highest control classes. The 4 in class 3 and 4 are small treatment plants for hazardous waste, which was a preferential topic last year. Five wastewater treatment plants were audited as part of the campaign to inspect the control of heavy metal in municipal sludge. Minor enterprises with potential discharges of heavy metals to the wastewater treatment plants were inspected in connection with these audits.

Inspections were mainly used to check enterprises in control class 3 and 4 and enterprises without permits. Inspections are also used as a follow-up to self-reporting. If the annual report is not received after the first reminder, the enterprise will be inspected. Enterprises will also be inspected if reported violations do not include explanation of corrective actions taken to avoid recurrence.

The violations revealed during inspections are classified according to how serious the violation was. These results are given in table 3. Enterprises in control class 1 and 2, which are regularly inspected, are more frequently in compliance, and the violations found are minor. The percentage of enterprises in compliance is lower and the percentage of serious violations is higher for minor enterprises, which are not often inspected.

Table 3. Results From Unannounced Inspections in 1993

	No Violation	Minor Violation	Serious Violation
Control Class 1	34	66	0
Control Class 2	20	80	0
Control Class 3	8	74	18
Control Class 4	10	80	10
Controlled only by regulations	12	84	4
Hazardous waste handlers	40	50	10

The cause of the violations revealed during the inspections are listed in table 4. This table gives a summary over violations revealed for the inspected enterprises, and the results are given as a percentage for each type of violation within each control class. Many enterprises have more than one type of violation. The two main reasons for violations are insufficient self-monitoring and management system, and insufficient handling of waste or chemicals. The high percentage of violations due to these reasons is of course a result of the priority these topics have been given. SFT considers internal control, preventive actions, reliable environmental management and the handling of hazardous waste and chemicals to be high priority areas.

Table 4. Violations Revealed During Unannounced Inspections 1993

Violation	Control Class			
	1	2	3	4
Exceeding production limits	0	7	6	12
Acute pollution	0	7	3	6
Defective or insufficient technical equipment	6	7	12	17
Insufficient maintenance	3	10	9	5
Insufficient self-monitoring and management systems	27	57	60	75
Exceeding discharge limits	3	7	10	21
Insufficient handling of waste or chemicals	27	30	25	44
Other	3	10	22	29

Results obtained through audits confirm the results from the inspections. By performing audits, SFT does not only monitor compliance and reveal violations, we also find the reasons for non-compliance. Only 5 of the 54 audited enterprises were in compliance. The causes for non-compliance are given in table 5.

Table 5. Violations Revealed During Audits in 1993

Violation	No. of Enterprises	%
Environmental management system:		
Not established	15	28
Not completed	13	24
Non-compliance with internal rules	10	19
Exceeding discharge limits	8	15
Discharge without permit	4	7
Defect or lack of technical equipment	7	13
Insufficient control of purification plant	7	13
Insufficient maintenance of vital equipment	4	7
Insufficient system for self-monitoring	14	26
Insufficient information and declaration of chemicals	5	9
Insufficient handling of waste and chemicals	5	9
Insufficient prevention against acute pollution	7	13
Other	5	9

3 INTERNAL QUALITY ASSURANCE

By organizing enforcement into a separate department, as done in SFT, the inspectors also have an internal "quality assurance" function. The inspectors will, during the inspections, also reveal whether the permits are relevant to the current situation in the enterprise or not. Nonenforceable or ambiguous permits will immediately be discovered. Unfortunately, we may also find incorrect handling of the permits by the case officers.

Irrelevant conditions or nonenforceable permits are reported directly to the case officers. Procedures for dealing with nonconformity will be established this year. Nonconformity will be reported by chain of command to the responsible department.

As a result of last years' inspection activity, all the enterprises in the textile industry are asked to apply for new permits due to irrelevant claims in the existing permits. There will also be an evaluation of the authorities control of the hazardous waste system due to revealed weaknesses and possible misunderstandings. New guidelines for how to compose permits for wastewater treatment plants and waste disposal sites will be worked out due to problems with enforcability.