
RANDOM AND RISK-BASED INSPECTION TO INCREASE ENFORCEMENT EFFECTIVENESS: EXPERIENCE OF THE SLOVAK INSPECTORATE OF ENVIRONMENT

RAJNIAK, ING. IVAN, CSC.

The Slovak Inspectorate of Environment, Department of Air Pollution Control,
Karbúňská 2, 842 22 Bratislava, Slovak Republic

SUMMARY

This paper presents the legal position and basic duties of the Slovak Inspectorate of Environment, Department of Air Pollution Control (DAPC). Because of the status of the economy and institutions, deliberate non compliance is high, and imposition of sanctions and fines are important. The Slovak Inspectorate of Environment has taken deliberate steps to strengthen its enforcement program and must now pay increased attention to detecting hidden operations outside legal frameworks.

In order to increase the efficiency of its certain activities, the Slovak Inspectorate of Environment, Air Pollution Control Department recently adopted the following measures:

- Detailed analysis of activities,
- Risk analysis of the chosen technologies,
- Random inspection.

1 BACKGROUND

The Slovak Inspectorate of Environment as an independent state authority is supervised by the Ministry of Environment. It is organized in four departments:

- Air Pollution Control Department (DAPC),
- Waste Management Inspection Department,
- Water Management Inspection Department,
- Nature and Landscape Protection Department

These particular departments are more or less independent. It means, planning and execution of the control activities are done by the particular departments independently,

The departments are not involved directly in permitting process. Other authorities which are supervised by another Ministry are in charge of the permitting process.

The cooperation of the Slovak Inspectorate of Environment staff at the permitting process is possible but not very common. As for me I am responsible for managing the Air Pollution Control Department. In the following text we are going to give short report on our experience with detecting operations outside of legal frameworks. In spite of the fact that in Slovak market economy had been more or less implemented the economy is still in transition from the centralized system to a market system. One can still find systems of management which are far from market based economy. It is evident that such reality must be reflected in

environmental protection. Low environmental self - consciousness, accompanied sometimes by economic problems causes conscious or unconscious neglect of environmental laws. For this reason, it is possible to draw a conclusion that can probably be generalized to all countries which are in transition to market economies that in the case of noncompliance with environmental laws our Inspectorates have to impose sanctions - fines. I propose that any attempt to solve problems by agreement would fail frequently under our conditions. Moreover it is evident that using a different approach to different plants (in one case to impose fine - in another case not to do so) would not be fair. It is evident that consistent control activity is very important from the point of view of credibility and authority in its relationship to industry.

Increasing the power of the Inspectorate is very important to prevent non - compliance with environmental laws.

In the past 5 years the number of fines which were imposed increased gradually during the first 3 years and remained more or less stable over the last 2 years. This is a consequence of environmental legislation and result of our control activity. At present detecting operations outside legal frameworks requires at present more effort than a few years ago. The Slovak Inspectorate of Environment has found ways to address this problem without causing a decrease in consistency of our other activities.

With the aim to increase efficiency of control activity we analyzed in detail the results which were achieved during the period of January 1993 through December 1996. The main aim of this analysis was to find industrial branches in which operation outside legal frameworks is the most frequent. Under our conditions we have concluded that operations outside of legal frameworks can be found most frequently in some medium size and smaller plants.

To find the operations outside legal frameworks in the large plants with complicated technology is more difficult because of the following:

- More competitive surroundings than before (before 1989) improved not only quality but also environmental protection. Better environmental protection is prevailing a result of modernization or of up - grading the existing technologies.
- Market driven requirements for higher quality production require these plants to accurately keep within specified operational parameters. For environmental protection implementation of ISO 9000 standards and of course implementation of different environmental management systems (EMS) is very helpful.
- Implementation of quality standards and EMS systems makes inspection on site easier and less time-consuming. That is why plant operators have to be more careful with regard to inspection.
- In the large plants they know that they are under more consistent supervision than in the smaller plants.

2 RISK ANALYSIS

The result of the mentioned analysis of our control activities have been compared with the results of risk analysis of different technological processes. In the risk analysis we used criteria which are used by some European inspectorates. Basically the theoretical possibility of non - compliance with environmental laws is evaluated. The following indicators are used: :

-
- a) Number of indicators (operational parameters detectable only during on site inspection). Indicators are defined as controlled parameters e.g. temperature, pressure, leakage etc. which are possible to check only during on site inspection. In Slovakia, there currently is no system for registration and recording (neither automatic nor manual), no opportunity to check operational parameters from the past.
0 - no indicators, 1 or 2 there are indicators
 - b) Number of indicators of the fuel gas cleaning system detectable only during on site inspection
0 - none, 1 - some
 - c) Whether it is possible to use another fuel/raw material than are the requirements of Approved Technical Documentation
1 - Yes, 0 - No
 - d) Whether it is possible to operate system (technology) at different operational parameters than are the requirements of Approved Technical Documentation
1 - Yes, 0 - No
 - e) Whether non - compliance was found more than once
1 - Yes 0 - No
 - f) Whether the industrial branch is known for its non - compliance with environmental laws
1 - Yes, 0 - No
 - g) Whether there have been any kind of complaints
1 - Yes, 0 - No
 - h) Economic situation of the plant (industrial branch)
1 - Bad, plant in loss or in debt, 0 - O.K.
 - i) Whether modernization (up - grading) technology is being prepared
1 - Yes, 0 - No
 - j) Whether there is an Environmental Management System
0 - Implemented, 1 - No

The higher the number of points the higher is the theoretical chance to find non - compliance with the law. It would be very interesting and useful particularly for its potential benefits for environmental protection to be able to use risk analysis for helping to target or focus inspections drawn from international experience, if something like that has not already been done. At least it could be useful to discuss and to publish the experience of different inspectorates with different industrial branches (plants). There are many technological systems which are basically very similar regardless the country in which the system is operated. As it was possible to expect results of analysis of our control activity are in good accordance with risk analysis.

3 RANDOM INSPECTION

With the aim to increase efficiency of our control activity we have implemented the new type of inspection - random inspection. The main characteristics of random inspection :

- At the inspection the inspector concentrates only on chosen operational parameters at which it is possible to presume some problems.
If everything is in compliance with approved parameters the inspection can be finished with the very short report - 1 to max. 1,5 pages.
If the operation is not in compliance the inspection must be completed by the full procedure ending with a protocol and a fine.
- An inspection can be done during several visits to the plant. It means that inspector visits the plant several times for a short visit during the non - specified time period. At the inspection the inspector concentrates on chosen parameters which can, but need not, be in some kind of correlation.

4 CONCLUSIONS

We want to increase the efficiency of our Inspectorate at detecting operations outside legal frame works by the above mentioned procedures :

- detailed analysis of control activity,
- risk analysis of the chosen technologies,
- implementation of random control system

The final aim of our effort is not to increase number of fines - the aim is to reach better air protection.

Only time - at least one or two years - will show if we were or were not successful.

ANNEX 1

Results of analysis of control activity of the SIE, Department of Air Pollution Control. Period January 1993-December 1996.

In the mentioned period Slovakia was divided into three main administrative regions:

- West part, responsibility of the regional inspectorate located in Bratislava (capital of Slovakia),
- Central part, responsibility of the regional inspectorate located in Banska Bystrica,
- Eastern part, responsibility of the regional inspectorate located in Kosice.
- Results of all three regional inspectorates were analyzed.

Number of detected hidden operations outside of legal frameworks according to the industrial branches:

1. Power and heat production (combustion of fossil fuels):
 - a. total number of inspections 571
 - b. total number of detected hidden operations 35
 - c. efficiency of control activity 14%
2. Industrial wood processing:
 - a. total number of inspections 107
 - b. total number of detected hidden operations 35
 - c. efficiency of control activity 33%
3. Production of non-metallic mineral materials:
 - a. total number of inspections 229
 - b. total number of detected hidden operations 32
 - c. efficiency of control activity 14%
4. Production and processing of metals:
 - a. total number of inspections 116
 - b. total number of detected hidden operations 28
 - c. efficiency of control activity 24%
5. The other kinds of industry:
 - a. total number of inspections 144
 - b. total number of detected hidden operations 20
 - c. efficiency of control activity 14%
6. Chemical industry:
 - a. total number of inspections 129
 - b. total number of detected hidden operations 13

| | | |
|----|--|-----|
| c. | efficiency of control activity | 10% |
| 7. | Incineration of industrial and municipal waste: | |
| a. | total number of inspections | 50 |
| b. | total number of detected hidden operations | 13 |
| c. | efficiency of control activity | 26% |
| 8. | East-Slovakian Steel Works, Kosice (results from the largest steel making plant in Slovakia were analyzed separately): | |
| a. | total number of inspections | 33 |
| b. | total number of detected hidden operations | 5 |
| c. | efficiency of control activity | 15% |

The total number of inspections during the period of January 1993 through December 1996 was 1379. Operations outside of legal framework were detected during 226 inspections. Examples of detected problems:

- Non-compliance with approved technical parameters (temperature, pressure, pH-value in the alcalic wet washer, quality of raw material, quality of fuel, optimal voltage and current at operation of electrostatic precipitator, etc.)
- Poor maintenance--about 50% of detected problems-- (holes in the flucducts, measurement technique or flue gas analyzers out of order, old and inefficient catalyzers, etc.)

The average control activity efficiency is 16%