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Agenda item 4: Strengthening the Inspection and Permitting Systems to promote the use of Best Available Techniques (BAT)

Guide on Inspection of Industrial Facilities

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Explanatory Note by the Secretariat

1. Several articles to the Protocols under the Barcelona convention refer to the obligations to ensure implementation and law enforcement. In particular the Land based Sources and Activities Protocol as amended in 1996, under its Article 6 on authorization or regulation system provides for:

“Point source discharges into the Protocol Area, and releases into water or air that reach and may affect the Mediterranean Area, as defined in article 3(a), (c) and (d) of this Protocol, shall be strictly subject to authorization or regulation by the competent authorities of the Parties, taking due account of the provisions of this Protocol and annex II thereto, as well as the relevant decisions or recommendations of the meetings of the Contracting Parties.

To this end, the Parties shall provide for systems of inspection by their competent authorities to assess compliance with authorizations and regulations.

The Parties may be assisted by the Organization, upon request, in establishing new, or strengthening existing, competent structures for inspection of compliance with authorizations and regulations. Such assistance shall include special training of personnel.

The Parties establish appropriate sanctions in case of non-compliance with the authorizations and regulations and ensure their application.”

2. In the framework of MED POL Programme of UNEP/MAP, an informal network on enforcement and compliance had been established which meets on regular basis and aims at sharing relevant best practices with the view to support the Contracting Parties to comply with the obligations under Article 6 above.

3. One of the activities approved under the MAP PoW 2016-2017, COP 19, Athens, Greece, 2016, is related to the preparation of guide documents to facilitate both the identification or selection of BAT during the authorization (permit) process as well as and the environmental inspections of facilities in view of BAT implementation.

4. The present document represent a practical and simple guidance tool to support the relevant national authorities in promoting BAT application in the inspection process.

5. The document is composed of two main parts, a general one addressing overall processes related to inspection such as planning, effectiveness, follow up, indicators, etc., and a second one addressing check lists required to facilitate the inspection process with the view to be used as guidance for the conduction of inspections in selected industrial sectors.

Guide on Inspection of Industrial Facilities

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Abbreviations/Acronyms

BAT	Best Available Technique
BREF	BAT Reference Documents
ELV	Emission Limit Value
EMAS	Environmental Management and Audit System
EQS	Environmental Quality Standards
EU	European Union
IMPEL	European Union Network for the Implementation and Enforcement of Environmental Law
ISO	International Standards Organization
PRTR	Pollution Release and Transfer Register
UO	Unit Operation

Introduction

1. The Guide on inspection of industrial facilities is aiming at the acquaintance of the national inspecting authorities with the general framework for conducting of inspections which includes issues such as planning, preparation and execution of an inspection focusing on practical issues such as the relevant checklists to be used during a site visit. Therefore the Guide will contain a general part which is essential to understand the steps to be taken for a successful conduction of an inspection; on the other hand the practical checklists will give an insight into the technologies (introduced in a facility, either as production units or as pollution abatement measures) as well as on the main pollutants to be checked for some industrial sectors (as examples). As a matter of fact the Guide will be mainly tailored to assess the BAT performance of an industrial installation in order to find out whether the relevant BAT described in the permit are put in place and perform according to the permit's conditions (ELV).

2. In doing so, the inspector has to be provided with a set of information which will help him to assess whether the installed BAT are fulfilling the scope of their introduction in the industrial process i.e. meeting the ELV as well as reducing the consumption of resources.

3. The target groups for the use of the Guide are mainly the national inspectors who are generally familiar with the conduction of inspections but they need well documented tools to facilitate their work i.e. the relevant checklists. Additionally the permit writers will also benefit because they will understand the practical context where the on-site inspections are conducted so that they will be able to modify the relevant permits according to inspections' findings.

4. The purpose of routine/non-routine inspections is to check compliance of the inspected installations with legal requirements and permit conditions. In case of non-compliance the competent authority will require the operator to take measures necessary to ensure that compliance is restored.

5. Following each site visit, the competent authority prepares a report describing the relevant findings regarding compliance of the installation with the permit conditions and conclusions on whether any further action is necessary.

6. The purpose of this document is to provide the necessary background information for inspectors on how they have to inspect various industrial operations in order to better conduct their in-plant inspections.

7. The Guide is structured in 2 parts: part 1 (general) gives background information on the elements to be considered when inspections are planned i.e. planning/execution of an environmental inspection, reporting after the on-site visit and performance monitoring (i.e. evaluation of inspections, follow-up actions taken for enforcement, inspection performance indicators) whereas part 2 is devoted to the presentation of some checklists which will be used as guidance for the conduction of inspections in selected industrial sectors.

1. General part

1.1. Planning of an environmental inspection

1.1.1. Types of inspection

8. Before embarking to conduct an inspection it must be clear for the inspectors the framework/context which defines its purpose and scope in order to avoid scattered and bad organized site visits which inevitably will cause wasting of resources (e.g. manpower/equipment) and, on the other hand, eventual complaints of plant owners and of the public. Therefore an inspection program has to be designed which will follow concrete purposes, priorities and targets. In table 1 the types of inspections are shown.

Table 1: Inspection types

Inspection type	Objectives
Program	
Geographic	<ul style="list-style-type: none">• Checking of pollution sources to specific receiving media• Checking of pollution sources from facilities in a specific area
Sector specific	Checking of aspects relevant to specific sector
Site inspection	
Comprehensive	Evaluation of compliance of all facilities of one/more sectors in a geographic area
Specific	Investigation of compliance status of one or more facilities on the basis of complaints
Follow-up	Evaluation of implementation of compliance procedures (from previous inspections)

9. Therefore the inspections' coordinator has to define in advance (i.e. before starting the inspections) whether the inspections should be devoted to a geographic area e.g. a river basin or a coast line where many installations are located or to a specific sector (e.g. iron/steel production) which contains several installations which are located in one or more geographical areas. In doing so, a good input for deciding about the inspection program is the historical findings from previous inspections i.e. inspection results from the past, monitoring results i.e. self-monitoring reports (prepared by the operators of the installation), any past/current complaints from the public etc.; the permit conditions i.e. critical pollutants and the associated emission limit values (ELV), environmental quality standards (EQS) of the ambient environment in the area concerned form the framework for setting the inspection priorities for those installations which potentially endanger the quality of the related recipients (water bodies, soil, air).

1.1.2. Minimum inspection criteria

10. All inspection activities should be planned in advance, by having inspection plans that cover the entire territory of the country and those sectors/installations which can cause a potential harm to the environment.

11. The plans should be based on:

- (i) The legal requirements to be complied with
- (ii) A register of controlled installations (structured according to their size and environmental "importance")
- (iii) A general assessment of major environmental issues in the area

- (iv) A general appraisal of the state of compliance of the controlled installations so far: number/size of installations which showed deviations from set standards in the past and of those ones which generally comply with the set legal requirements.

12. Each inspection plan should as a minimum:

- Define the geographical area which it covers, which may be for all or part of the territory of a country
- Cover a defined time period (e.g. one year)
- Include specific provisions for its revision
- Identify the specific sites or types of controlled installations covered
- Prescribe the programmes for routine inspections, taking into account environmental risks; these programmes should include, where appropriate, the frequency of site visits for different types of specified controlled installations
- Devote additional time for random inspections which can occur in case of unforeseen circumstances (e.g. sudden release of pollutants, public complaints)
- Provide for coordination between the different inspecting authorities, where relevant.

1.1.3. The inspection cycle

13. A schematic picture of the whole inspection cycle is given in figure 1. This is an interactive process; that means that the reporting findings can lead to a review/modification of the inspection plan.

This cycle can be further described (figure 2):

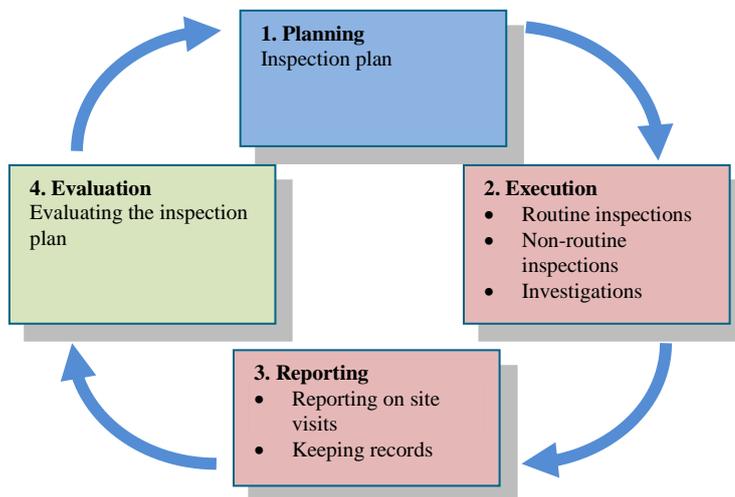


Figure 1: The inspection cycle

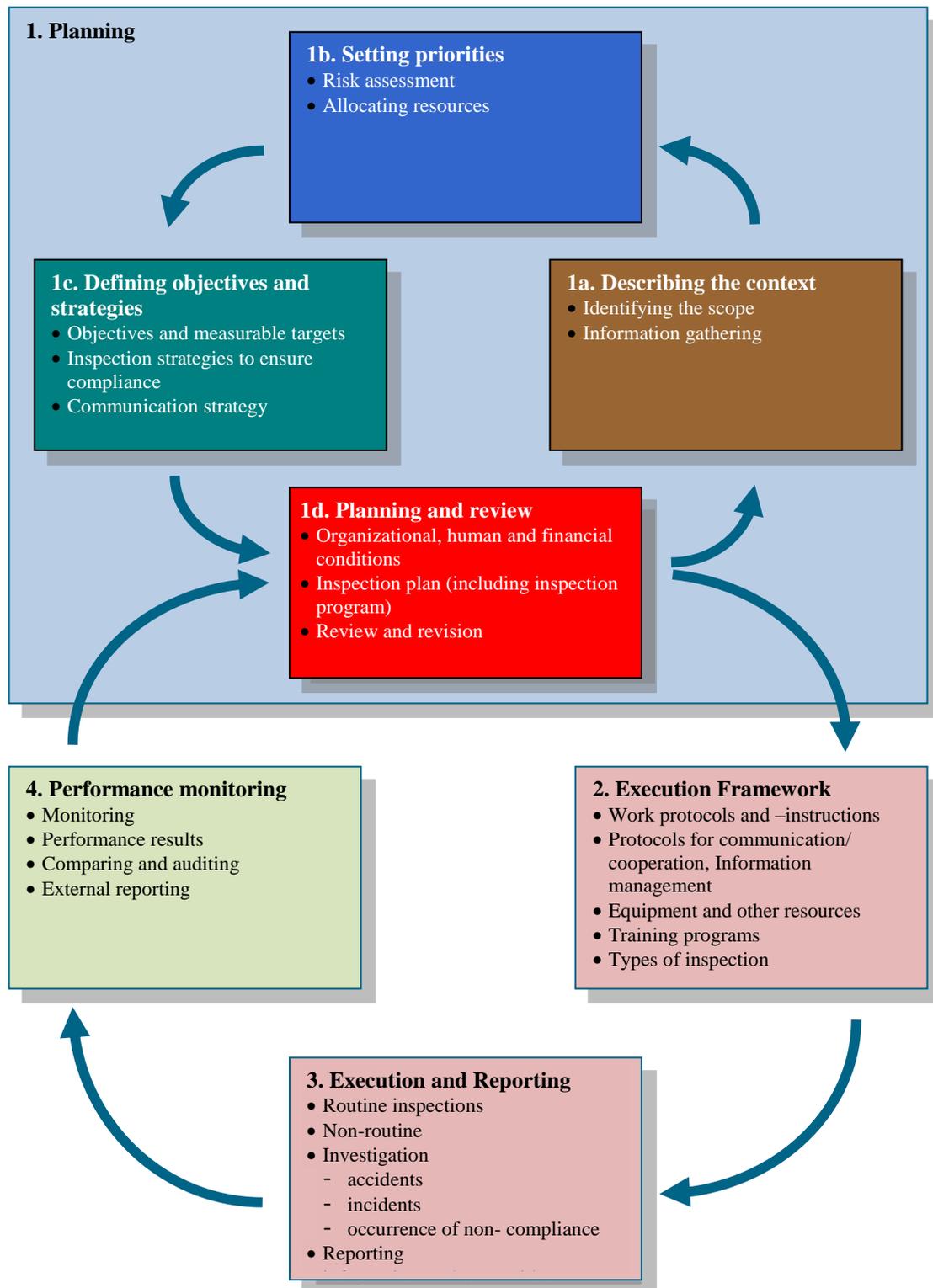


Figure 2: Inspection cycle – details

1.1.3.1. Context

14. Describing the context is a first step of the systematic approach for planning of inspections and a necessary input for identifying and analyzing the risks; it defines the scope and objectives of the inspection plan taking into consideration the country's environmental policies (as a whole or in a specific geographic area), the existing situation in the environmental recipients (water, air, soil), the available resources (i.e. financial means, manpower, equipment) so that a comprehensive, practical and targeted plan can be designed.

1.1.3.2. Setting priorities

15. Setting priorities starts with a risk assessment. The main goal of a risk assessment is to prioritize the workload of the inspectorate. The result of an assessment will result in an inspection frequency of site visits of inspection objects. The reason for prioritizing the workload is that inspecting authorities have limited resources (inspectors and finance), which should be distributed among the inspection objects in an accountable way. In a risk-based approach, most inspection effort should be expended on the objects with the highest risks (highest risk first).

16. Elements to be taken into consideration for the risk definition can be:

- Quantity/quality of air pollution
- Quantity/quality of water pollution
- Potential pollution of soil and ground water
- Waste production or waste management
- Amount of dangerous substances released
- Local nuisance (noise, odor)

1.1.3.3. Objectives/strategies

17. Based upon the priorities, the inspectorate should set targets and objectives. In order to establish whether these objectives and targets can be met, the outputs of the inspections must be monitored. This is generally done by using performance indicators. Examples of performance indicators that may be useful are:

- The amount of incidents or complaints occurring
- The level of compliance
- The actual achievement of reduction targets for certain pollutants
- Improvement of air, land and water quality through the actions of the inspectorate to improve compliance.

18. These indicators will be derived by analyzing historic monitoring/inspection data so that the strategy to be developed will not be too ambitious or too difficult to be implemented.

19. To determine the best inspection strategy it can be useful to assess the following 2 elements:

Element 1

20. Clearly define the target group (i.e. the installations) and the rules they have to comply with.

Element 2

21. How often and why the target group does not meet the standards set by the relevant permitting authorities.

22. The aim is to get an insight into the target group compliance behaviour and the motives for that behavior: in many cases the operators do not comply with the requirements due to:

- Increased costs
- Lack of qualified personnel for emissions monitoring
- Confidence that the inspections will rarely occur
- Bribing of inspectors

23. On the basis of these elements the inspection strategy will define the pathways to be followed in order to define the installations to be inspected according to the expected emitted pollution load, the installations' past behavior and the quality of the inspecting personnel.

1.1.3.4. Planning/review

24. Based upon the previous steps, the inspecting authority should then develop its inspection program and plan. The inspection program can be seen as a strategic reference document which will act as guidance throughout the whole inspection cycle.

25. The program will describe:

- The objectives that the Inspecting authority, given its mission and tasks, wants to achieve
- The policy, environmental, legal, organizational, financial and other relevant conditions under which the inspecting authority has to perform its inspection activities
- The strategies which the inspecting authority has adopted for performing its inspection activities
- How priorities with regard to inspection activities are set, taking into account these objectives, conditions and strategies
- The priorities themselves.

26. When developing the inspection program and inspection plan it is necessary to consider the organizational, human and financial circumstances. Most importantly the inspection program and the inspection plan should be in balance with the available resources and budgets and should be in line with the organizational structure.

27. When the program and the plan for the forthcoming inspections are set it will define and prioritize:

- The regions and environmental recipients which potentially are in danger from pollution caused by certain installations
- The industrial sectors which show a greater potential to harm the environmental quality of these recipients
- The specific installations which have to be inspected in a defined time interval.

28. It must be noted that, obviously, the larger installations of a specific sector (e.g. food processing industry) have to be tackled first; however and due to the fact that many smaller industrial units can cause a cumulative pollution load (in some cases comparable to a single large one), the plan should envisage the inspection of some of these installations as well. The available resources (manpower, equipment) should be distributed accordingly. As a rule of thumb:

- ✓ All large installations discharging in a single recipient (e.g. a coast line, a river) have to be inspected
- ✓ Approx. 30 – 40 % of the medium/small installations have at least to be investigated.

29. The review and revision of the inspection plan is also part of this step of the environmental inspection cycle: it is possible that, after execution of the initial plan, some findings can show that, due

to improved performance of the inspectors or compliance with the permit standards of high risk installations, the plan's objectives and/or content have to be revised.

30. The inspection program should be multi-annual and reviewed/modified annually. Its intermediate and final performance has to be communicated to other relevant authorities as well as to the public: this communication can provide information on the numbers and types of regular inspection supervision (which can be approx. 60% of the total number of inspections), extraordinary inspection supervision (which can be approx. 40% of the total number of inspections) to be carried out, including the frequency of site visits for different types of specified installations to be controlled and of course some crucial inspection results on the basis of required confidentiality (e.g. how many installations have met/not met the standards, which environmental recipients are in danger etc.).

1.2. Execution of an environmental inspection

1.2.1. Execution framework

31. As framework is meant the preparation of the necessary "infrastructure" for the implementation of the inspection program/plan: the absence of it will lead to badly prepared on-site inspections.

32. Within this step, training, protocols and working instructions are developed and conditions for realization of inspections are established. This step is necessary to make sure that inspection activities can be executed effectively, efficiently, professionally and consistently.

33. The execution framework should at least cover:

- Training program(s) for the inspectors (staff) based on a training needs assessment
- Protocols and working instructions for routine inspections
- Protocols and working instructions for non-routine inspections (how to react to incidents and accidents).
- Procedures for imposing sanctions
- Development of inspection and enforcement handbooks
- Protocols for communication with the public (access to information) and with industry
- Information management (e.g. information systems) and information exchange (within the organization and with partner organizations)
- Provisions and memoranda of understanding for cooperation with relevant partners (other inspecting authorities).

34. For the realization of the inspection framework some crucial conditions have to be fulfilled namely:

- Clear authorizations and competencies (e.g. legal right of access to site and information)
- All necessary assistance from the operators to carry out any site visits, to take samples and to gather information necessary for the performance of their duties (described in the inspection legislation)
- System for planning, programming and monitoring
- Facilities and materials needed (e.g. computers, transport, and means of communication).
- Maintenance and calibration of equipment.

1.2.1.1. Training

35. Inspectors in principle should be well trained persons on a continuous basis. This is a precaution as BAT are evolving and so does the law (e.g. issuing of permits, new inspection authorities etc.). The trainings should be twofold:

- Focused on administrative issues and legal aspects of inspections
- Focused on technical aspects of inspections.

The first type of training must include the following aspects:

- Administrative preparation of inspections, including planning issues
- Legal acts on inspections
- Interpretation of legal acts.

36. Training does not have to mean a group of inspectors gathered together in one room with a lecturer. It might be realized on an individual basis, even weekly e.g. professional duties can include the reading of a case-law of a court or the examination of a received complaint from an installation's neighborhood.

37. The second type of training should be focused on technical aspects that an inspector may encounter on site. This should be co-ordinated with the way inspectors are assigned to installations/sectors of industry.

38. Two solutions for this "technical" training are possible:

1. The inspectors focus on one aspect of the environment e.g. some inspectors concentrate themselves on wastewater issues, other on waste issues, etc. This enables achievement of a high level of competences in particular fields, however an integrated approach to installations might be lost.
2. The inspectors focus on particular branches of industry, where there are a lot of cross-media aspects in terms of environment e.g. one inspector might be well-trained in food industry, another one in metal processing industry.

39. The training can be conducted by experienced inspectors or by specialized external experts.

Issues that can be addressed in a training program:

40. Before developing a training programme for an inspector or a group of inspectors a training needs assessment must be performed. This assessment will show the gap(s) between the required and existing skills and qualifications for job. Based on this assessment a training programme may include the following issues:

Knowledge of:

- work and procedures in governmental organizations
- procedures, methods and systems in the field of environmental inspections
- respective industrial sectors
- the applicable legislation
- the procedures in court
- environmental management systems (i.e. ISO 14000, EMAS).

Specific skills required by an inspector:

- Basic inspection skills
- Sampling of emissions, soil and waste
- Assessment of administration and data management (e.g. maintenance, monitoring)

- Basic information technology
- Social skills, especially for dealing with difficult facilities' operators
- Communication skills to communicate with industry, the public and provision of evidence in a court of law.

1.2.1.2. *Equipment*

41. Equipment that an inspector should have during on-site inspections is:

- A camera (it should take pictures of a minimum quality)
- Clothes resistant to atmospheric conditions and difficult circumstances (e.g. water proof boots) as well as safety equipment
- Some basic measuring equipment such as pH-meter, conductivity meter, etc. that should be taken if needed
- Any equipment needed for taking complex samples if necessary.

1.2.1.3. *Working documents*

42. For the best possible implementation of the on-site visits some protocols (checklists) have to be prepared before the visits in order to achieve a targeted and well focused visit. These checklists can be:

- General – horizontal i.e. dealing with issues such as the environmental management procedures, monitoring/reporting systems, end-of-pipe facilities (i.e. wastewater treatment plants, air pollution abatement devices), waste handling/storage management, noise/odor etc.
- Specific for the industrial sector concerned aiming at the assessment of the level of BAT installment and operation.

43. Types of these checklists will be listed (as examples) in the 2nd part of this Guide.

1.2.1.4. *Authorization and competences*

44. Each inspector should be formally authorized by the inspectorate to carry out environmental inspection. He/she should have an identification card while conducting inspections. At the beginning of inspection, the inspector should identify him/herself with his/her identity card to the subject of supervision or to the responsible or other authorized persons of the installation.

45. Obligations and authorizations of inspectors should be described in detail in the relevant law on inspections and in other legislative acts such as the framework law on environment and corresponding sectoral legislation (e.g. law on nature protection, law on waste etc.).

1.2.1.5. *Cooperation with other institutions*

46. The inspector has the right to request information from a state administration body or legal entity, as well as assistance from a state administration body for the purpose of completing the inspection supervision. The same applies to cooperation with other institutions: the inspector may, within the boundaries of the inspection procedure, request an opinion and cooperation from expert institutions, should that be necessary to properly assess the actual situation.

47. It is possible that a joint inspection is necessary e.g. when indications show that a freshwater reservoir is in danger and the expertise of the specialized drinking water authority is needed to assess the potential damage from a polluting activity. In terms of administering such cases, the corresponding inspectorates are obliged to:

- ✓ Consolidate the work plans and programs of both (or more) inspectorates and plan the joint inspections
- ✓ Exchange experiences and consolidate opinions on the means and methods of work and other issues;
- ✓ Hold joint meetings, consultations, councils and other forms of joint cooperation and
- ✓ Inform other state bodies competent in the enforcement of the corresponding regulations, when the inspection services make some finding relevant to those regulations during the supervision.
- ✓ Inspectors should be aware of the existing protocols to implement such joint inspections and modify them if necessary.

1.2.1.6. Programs for routine/non-routine inspections

48. The regular (routine) inspection supervision is an announced supervision that is performed on the basis of the working program of the inspectorate and covers the inspection of the enforcement of the laws.

49. The routine inspection is performed after the expiry of the term determined in the inspection report adopted by the inspector in the last prior inspection. During this inspection the inspector will verify the facts and the actual situation and will conclude whether the operator (in relation to the previous inspection findings):

- Took all the actions required
- Partially took the actions required
- Did not take any action.

50. In terms of routine inspections, there are two basic types:

- On-site inspection (as mentioned above)
- Desktop inspection which is a "paper" inspection based on the reports submitted by operators - focused mostly on checking whether monitoring and reporting obligations are fulfilled plus obtaining the knowledge on the fact whether emission limit values stated in environmental permits are not breached.

51. The extraordinary (non-routine) inspection is an unannounced inspection and is performed upon initiative submitted from state authorities and physical or legal persons.

1.2.2. Execution and reporting

52. In this step the inspections are actually carried out: the various inspection activities (aiming at compliance) are prepared and executed. Traditional inspection activities are the (physical) routine (site) inspections, non-routine (site) inspections and investigations of incidents. Many of these activities can and should be executed according to standard protocols and working instructions (see 1.2.1.3.).

1.2.2.1. What should be inspected?

53. Each inspection should at least cover:

- A) Routine site visits:
 - Examining the environmental impact
 - Evaluating permits and authorizations
 - Monitoring of emissions
 - Checks of internal reports
 - Verification of self-monitoring devices
 - Checking of the BAT used

- Adequacy of the environmental management of the installation
- Additional inspection (follow-up/control inspection) in case an important non-compliance has been identified (within 6 months after the initial inspection).

B) Non-routine site visits:

- Complaints received
- Accidents and incidents occurred
- Occurrences of non-compliance (e.g. sudden discharge of pollution load into a river)
- The need for revising an existing permit or issuing a new permit.

54. In case of accidents/incidents:

- To clarify the cause and its impact
- Responsibilities, liabilities and consequences of the operator
- Follow up that has to be taken:
 - Actions to mitigate / remedy the impact
 - Actions for prevention of such cases in the future
 - Actions of the operator.
 - Enforcement actions.

55. Needless to say that non-compliances identified during inspections need to be followed up. In the specific case of a serious non-compliance an additional inspection has to be executed within 6 months at the latest (to examine whether the remedial actions have been implemented).

1.2.2.2. *What should be reported?*

56. Reporting/data gathering after a site visit should at least cover:

- Processed inspection data
- Recommendations for further actions
- Recorded reports (kept in an accessible database)
- Notification to the operator
- Publicly available information.

57. The audience of the inspection reports can be broad. Besides the inspectorate and the operator, also other competent authorities, ministries, public and the European Commission (for EU member states) could be interested in the results of the inspection. An inspection report should therefore be written in plain language and not too technical. Commercial confidentiality and national security are also issues to take into account before publishing the report. Because of this, it may be considered appropriate to make specific reports (i.e. a summary) excluding these issues to be accessible by the public.

58. In chapter 1.3.4. the rules/tips for the preparation of an inspection report are presented (EU practice).

1.2.3. Preparation of an inspection

1.2.3.1. *Type of inspection, staff, equipment*

59. This is an obligation of the head of the inspectors unit to decide on type of inspection and how many resources (including human resources and equipment) should be used for it. Some considerations that should be taken into account:

- Complexity of an installation - the more complex it is the more inspectors that may be directed to it;
- Time of inspection - for safety reasons it is recommended that at night two inspectors should conduct inspection;

- For non-routine inspection, especially conducted upon a complaint and problematic situation, it is advisable to direct two inspectors to it;
- Weather condition as well as the time of a year - some additional equipment might be needed (e.g. torches, protective clothes, etc.).

60. Having in mind that one of the inspection goals is to detect whether BAT have been introduced in an installation an integrated inspection has to be preferred. This type of inspection requires a well-qualified personnel and asks for a very good preparation before the inspection. A summary of the features of this inspection is summarized in table 2.

Table 2: Integrated inspection

Integrated inspection (process and prevention inspection)			
Objectives	Advantages	Disadvantages	Target facilities
<ul style="list-style-type: none"> • Improves overall efficiency and environmental performance • Promotes broader goals (e.g. pollution prevention, compliance assistance) 	<ul style="list-style-type: none"> • Considers all relevant factors • Capable of improving overall process • Capable of promoting broader goals (e.g. pollution prevention, compliance assistance) • Appropriate for industry sector 	<ul style="list-style-type: none"> • Requires development of in depth understanding of facility and processes • Training essential for the inspectors • Close cooperation with the operator is needed (not always feasible) 	<ul style="list-style-type: none"> • Appropriate for any size company where the goal is to identify and address process-related causes of non-compliance

1.2.3.2. Desktop study/collection of information

61. The more an inspector is prepared for an inspection, the better. Therefore he/she should gather all the relevant information and data that can be found in the following documents:

- Reports of previous inspections
- Maps
- Checklists (see examples in part 2 of this Guide)
- Environmental Impact Assessment studies
- Application for the permit
- The permit
- Environmental reports submitted by the operators
- Complaints received
- BAT documents (e.g. BREF)
- PRTR and other register
- Information on the installation received from other competent authorities.

62. If the inspection should focus not only on the general performance of the installation but also to which extent BAT are operational, some more detailed information has to be gathered such as:

1. Permit(s) or other types of authorisation of the installation and details of the application process including site reports, self-monitoring programme, EMAS, and mass balance information
2. The permit application submitted by the operator to the permitting authorities where the features of each BAT are described in details

3. Reports already submitted from the operator to the authorities on regular basis (e.g. self-monitoring report)
4. Technical literature: existing process techniques, industry best practice, related BREF, equipment used in the treatment process, equipment for pollution control and monitoring, analytical methods for pollutants identification
5. New or changed regulations of relevance to the installation
6. Technical drawings of the installation
7. Description of changes in the process or installation modification that are proposed or have been implemented
8. Process flow diagram for the installation. The site management may be asked to provide a process flow diagram showing the main process unit operations, inputs and outputs
9. Letters, reports, correspondence from previous inspections, including non-compliance and follow-up actions taken
10. Seasonal or other circumstantial differences that are of importance for the outcome of the visit
11. Inputs/outputs of unit operations (UO):
 - Which inputs should be assessed?
 - Raw materials (ton/day)
 - Chemicals/other additives (kg/ton of raw material)
 - Water consumption (m³/day)
 - Energy usage (kWh/day)
 - Which outputs should be assessed?
 - Air emissions (mg/Nm³)
 - Wastewater (effluents) discharges (kg/ton of raw material or mg/l)
 - Waste (kg/ton)
 - Products (ton/day)
 - By-products (ton/day)

63. All the gathered information will lead to specific questions which have to be formulated in an extensive questionnaire which will act as guide for the site visit.

1.2.3.3. *Before embarking for the site visit*

- ✓ Map the spots to be checked in the installation: emission points, fugitive emission sources, energy production facilities, storage sites, raw material handling systems (loading/unloading devices, feeding systems, chemicals handling), waste collection and disposal points
- ✓ Select the team for the site visit and assign roles
- ✓ Discuss and prepare the site visit programme with the team
- ✓ Inform the operator about the visit, ask for the availability of the necessary documents and draw up a common agenda/programme
- ✓ Get all documentation (checklists, tables, questionnaires) and any sampling and other (e.g. safety) equipment ready.

1.2.4. Execution of an inspection

1.2.4.1. *What to check?*

64. The questionnaire and the checklists will guide the inspector throughout his/her inspection. In general the inspector has to check:

- The administrative part (names of responsible persons, structure of the environmental management unit, procedures applied for monitoring the environmental performance of the installation etc.)
- The vicinity of an installation (this may be done even before entering the area of the installation) to see if there are some traces of a possible impact of the installation (e.g. leftovers of waste, dust from air emissions, appearance of a river that is a recipient of discharges from the installation)

- Production lines to assess whether the installation is actually working during the visit and to what extent
- Emission points to air/water to check whether their number and positions are in line with the permit
- All the required equipment used to protect the environment (e.g. air filters, the installation's wastewater treatment plant, barriers built to prevent leakages from storage tanks etc.).
- Areas and buildings used for waste storage: in the case of hazardous waste all the safety measures protecting against leakages (if the barrels are closed, the waste is packed in a proper way) and uncontrolled disposal to the environment should be checked.
- Self-monitoring devices.

1.2.4.2. *Sampling/laboratory analysis*

65. The inspector has to take any samples he/she thinks necessary for counter-check of the self-monitoring results (taken by the operator). In doing so, the inspector has:

- 1) In the same conditions and at the same time to obtain 2 samples in the amount necessary for examination (the second sample at the request of the operator)
- 2) To draft a report on the collection of the sample
- 3) To seal the samples and mark them properly
- 4) To submit without delay the sample for the first analysis to the appropriate expertise institution (prescribed by law).

66. In case of discrepancy of the laboratory results between the 2 samples a 3rd one has to be taken and be regarded as the "final/concluding" sample.

1.2.4.3. *Additional documentation*

67. Everything that can be found during inspections may be worth being collected and treated as evidence and must be attached to the report:

- Photographs
- Oral and written statements of the operator and the employees
- Reports from previous laboratory analysis results
- Notes/reports of visual inspection
- Documents such as environmental reports, registries, results of self-monitoring. In case of infringements it is worth making copies and attach them to the inspection report, as they will serve as a proof in case of later proceedings.

1.2.5. *Closure of the inspection*

68. Minutes of the inspection are crucial in terms of later actions that need to be followed. They have to be prepared by the operator, signed by him/her and counter-signed by the operator. The minutes have to be written in a "neutral" way; that means that personal opinions of the inspector and/or the operator should be avoided.

69. An outline of inspection minutes can look as follows:

- ✓ Each activity performed by the inspector should be mentioned. This includes taking samples and measurements as well as formal order to the operator to take the corresponding measures and activities in a certain period of time given by the inspector
- ✓ Findings from pictures, maps which show non-conformity
- ✓ Description of previous sampling results
- ✓ Short report of the sampling procedures (e.g. which samples/from where)
- ✓ Findings about BAT application (e.g. in which UO BAT have been operational, BAT performance, needed improvements etc.)

- ✓ Review of operator's statements
- ✓ Final conclusions.

1.3. Follow-up

1.3.1. Review of the inspection's findings

70. The inspector has to inform the head of the inspectorate and his/her colleagues about the overall execution of the inspection and the relevant findings namely:

- How the inspection has been performed: cooperation with the operator, accessibility of the installation's facilities, difficulties encountered (e.g. for taking samples, transport to the installation) etc.
- Overall appearance of the installation e.g. desolate machinery/equipment, modern facilities, level of BAT operation, existing end-of-pipe techniques etc.
- Findings \longrightarrow minutes
- Proposals for follow-up actions.

71. On the basis of this briefing the head of the inspectorate will propose the next steps to be undertaken e.g. fines/sanctions to be imposed.

1.3.2. Informing other competent authorities

72. In case that other institutions are also responsible for this installation (e.g. forestry department, water authorities) a short report has to be drafted and submitted to them in order to enable them to take the necessary follow-up steps. The permitting department has also to be informed, especially about the conformity of the findings with the permit conditions.

1.3.3. Fines/sanctions

73. In case of non-conformity the respective fines have to be discussed and agreed upon by the inspectorate. The following issues should be considered:

1. Level of environmental harm: this can be derived from the laboratory results and the endeavoured deviations from the prescribed permit conditions. In this context the consultation with those authorities which have defined the respective Environmental Quality Standards (EQS) is necessary
2. Frequency of deviations i.e. how often they happened (according to previous inspections' findings)
3. The size of the installation which inevitably can cause the emission/discharge of higher pollution loads
4. The legal framework defining the sanctions context.

74. In any case any level of flexibility (without breaking the law) for imposing the fines has to be explored in order to secure that the fines will lead to the installation's improvement of its environmental performance and that any lengthy legal procedures can be avoided: in case of very severe financial fines it is possible that the operator will consult lawyers and appeal the relevant decision.

1.3.4. Publication of the inspection report

75. The inspection report has to be reported and published on the inspectorate's website. The report's elements/content are described in chapter 1.2.2.2. In general the conclusions derived from the inspection should form the main part of this report.

It is possible that a consolidated report can be prepared i.e. containing findings from several inspections in one or more installations.

It must be noted that the report is part of the information provided to other authorities and to the public and justifies the inspectorate's activities and actions.

Some tips about the structure and content of this report according to EU practice are presented in table 3.

Table 3: Inspection report - EU practice

EU practice

When discussing reports that should be publicly available according to IED, the Directive states that the report should include the relevant findings regarding compliance of the installation with the permit conditions and conclusions on whether any further action is necessary.

There are some tips on reports in the IMPEL Reference Book on Environmental Inspection:

- General rules:

(i) The purpose of the inspection report is to present a factual record of an inspection, from the time when the need for the inspection is perceived through the analysis of samples and other data collected during the inspection.

(ii) The objective of an inspection report is to organize and co-ordinate all evidence gathered in an inspection in a comprehensive, useable manner. To meet this objective, information in an inspection report must be:

– Accurate. All information must be factual and based on sound inspection practices. Enforcement personnel must be able to depend on the accuracy of all information.

– Relevant. Information in an inspection report should be pertinent to the subject of the report.

– Comprehensive. The subject of the report should be substantiated by as much factual, relevant information as is feasible. The more comprehensive the evidence, the better and easier the prosecution task.

– Co-ordinated. All information pertinent to the subject should be organized into a complete package. Documentary support (photographs, statements, sample documentation, etc.)

accompanying the report should be clearly referenced so that anyone reading the report will get a complete, clear overview of the subject.

– Objective. Information should be objective and factual; the report should not draw conclusions.

– Clear. The information in the report should be presented in a clear, well organized manner.

– Neat and Legible. Adequate time should be taken to allow the preparation of a neat, legible report.

Conclusions regarding compliance:

Inspection reports should contain only the facts about the inspection. The report to the inspection management should be objective and complete. Clearly, the inspector's conclusions about the compliance of the facility are the critical factors to decide if a violation did or did not exist. It is essential, therefore, that the inspection report itself includes the inspector's conclusions regarding non-compliance.

When the inspection report is sent to the company, the personal opinion of the inspector must be omitted. Although the inspector may communicate to the company his view on certain matters, facts and figures should never be mixed with personal opinions.

If the inspector has concluded that there has been non-compliance, this information should be mentioned in the report sent to the company.

All inspection reports should preferably be read and discussed by more experienced inspector.

Note that the above mentioned principles are also applicable to the minutes of the inspection. The report is more comprehensive as it also includes non-compliance issues. In most EU Member States, there are no minutes of inspection but reports only. To be in line with the IED it is recommended to replace the notion "minutes of inspection" in the current Macedonian Law with a report that fulfils conditions of the Directive.

Usually, the leader of the inspection team is responsible for the drafting of the final inspection report; it also includes suggestions to the operator for the improvement of the environmental performance of the plant and proposal of amendments to the permit to the Competent Authority.

1.5. Performance monitoring

76. Good performance monitoring is essential for the inspecting authority. It helps to show to the public, the policy makers and the operators the results of the efforts of the inspecting authority in a defined period. The inspecting authority should act on the basis of systematic monitoring of the inspection and enforcement process and its result and effects.

This monitoring can take place on different levels: not only the results of the performance of the inspecting authority as a whole but also the performance of the individual inspectors has to be measured.

1.5.1. Reports

77. The performance of the inspectorate can be published on regular intervals, usually annually or biannually.

78. A typical report outline can contain the following sections:

1. General part

- Regulatory inspection framework i.e. the legislative acts governing the inspectorate's functioning/operation – mission of the inspectorate
- International standards fulfilled/cooperating organizations (e.g. IMPEL for EU countries)
- Organizational structure, manpower/equipment used
- Profile of inspectors
- Budget/financial resources

2. Inspections

- Types of inspections
- Subjects of inspections i.e. industrial installations, environmental facilities (e.g. landfills, wastewater treatment plants)
- Number of inspections performed in the given time period (1/2 years)
- Results achieved on the basis of indicators of performance of the inspectorate (see 1.4.2.)

1.5.2. Performance indicators

79. Regular checking of the inspectorate's performance is crucial to justify its mission and function. The best way for this checking is the close monitoring of some indicators which have to be comprehensive (well defined), simple and understandable.

80. Types of performance indicators can be:

- ✓ Total number of inspections performed/year
- ✓ Number of inspections allocated/inspector unit/individual inspector
- ✓ Number of complaints received/year
- ✓ Number of non-compliant facilities/year
- ✓ Number of samples taken/facility
- ✓ Number of administrative decisions issued/year
- ✓ Number of appearances in courts
- ✓ Number of fines/year
- ✓ Amount of collected fines (i.e. \$/€/year).

2. Checklists

To be completed