"Capacity Building and Strengthening Institutional Arrangement"

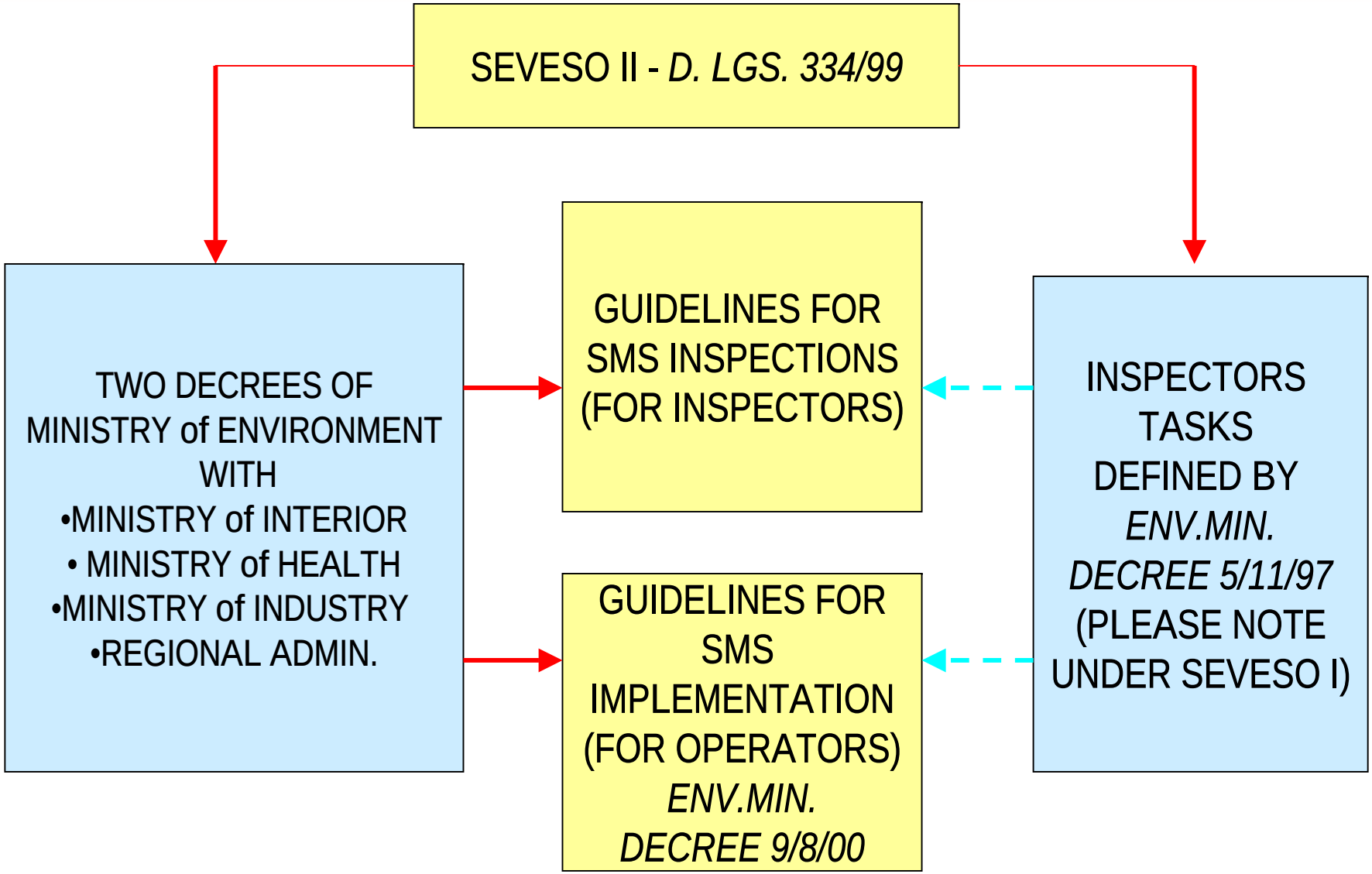
Workshop: Quantitative Risk Assessment of Oil and Gas Plants

Safety Management Systems for Oil and Gas Major Hazards Industrial Plants

Mr. Astorri Francesco

APAT

Agency for Environmental Protection and Technical Services


SEVESO II - *D. LGS. 334/99*
TWO DECREES OF MINISTRY of ENVIRONMENT WITH
•MINISTRY of INTERIOR
• MINISTRY of HEALTH
•MINISTRY of INDUSTRY
•REGIONAL ADMIN.
GUIDELINES FOR SMS INSPECTIONS (FOR INSPECTORS)
GUIDELINES FOR SMS IMPLEMENTATION (FOR OPERATORS) *ENV.MIN. DECREE 9/8/00*
INSPECTORS TASKS DEFINED BY *ENV.MIN. DECREE 5/11/97* (PLEASE NOTE UNDER SEVESO I)

The Enforcing Regulation for Sms Inspections (Articles 7 and 18 of Directive 96/82/ec)

- **D.Lgs. 334/99 - Art. 25**
  (implementation of art.18 of Directive 96/82/EC)
- **ENV.MIN.Decree 9 August 2000**
  (Guidelines for the Safety Management System implementation- ref. to art.7 of Directive 96/82/EC)
- **ENV.MIN.Decree 5 November 1997**
  (Organization of inspections and preliminary guidelines)
- **ENV.MIN.Decree on inspections measures appropriate to the major-accident hazards establishments *(still in draft)***

Decree 9 August 2000: "Guidelines For The Safety Management System Implementation"

BASED ON:

- ANNEX III OF SEVESO II DIRECTIVE
- JRC TECHNICAL GUIDE
- EXPERIENCE AND TECHNICAL DOCS. FROM OTHER EU COMPETENT AUTHORITIES
- UNI 10617 – 10616 – 10672 TECHNICAL STANDARDS (VOLUNT.)

• ISO WORLD:
8402, 9000, 9001, 9004

• AIChE/CCPS GUIDELINES
• D.O.E. MANUAL

DECREE 9 AUGUST 2000
"GUIDELINES FOR THE SMS IMPLEMENTATION"

TITLE I
"MAJOR ACCIDENT PREVENTION POLICY"

TITLE II
"GENERAL REQUIREMENTS AND SMS STRUCTURE"

TITLE III
"SMS TECHNICAL CONTENTS"

Title I

- ARTICLE 1

  Scope

- ARTICLE 2

  Required contents of the Document on major accident prevention policy

  – objectives
  – general principles of the policy established
  – information on adhesion to other voluntary management systems (i.e. EMAS, ISO, Responsible Care, OSHA, etc.)
  – how the SMS applies principles and objectives (actions)
  – SMS structure (main issues)
  – SMS implementation or planning of improvement actions

Title II

- ARTICLE 3
  General SMS requirements

– To set and document the policy, objectives and actions

– To ensure the policy comprehension and implementation

– To verify the compliance with the objectives, and identify needed corrective actions

ARTICLE 4

SMS structure

– it sets the possibility of structural integration of the SMS with other MSs (environment, quality, etc.). The major accidents prevention elements need to be traceable

– accepted Quality-Safety-Environment integrated systems only for the structural aspects (i.e. ISO, EMAS, Italian UNI regulations)

– the SMS structure has to ensure the principal functions typical of every Management System

Structural Integration With Other MSs

TYPICAL ISSUES OF EACH MS
(ISO WORLD)

- Policy And General Management
- Technical Organization And Human Resources
- Planning Of Activities
- Measure Of Performance
- Audit And Review

- They are common, without reference to the specific field (quality, environmental protection, safety at works, major accident hazard prevention, etc.)
- The integration of the structure and the organization of the MSs is feasible
- Contents are different

Title III

- ARTICLE 5
  Fundamental issues to be addressed

  – Organization and personnel
  – Identification and Evaluation of major hazards
  – Operational control
  – Management of changes
  – Emergency planning
  – Monitoring performance
  – Audit and review

TITLES FROM ANNEX III DIRECTIVE

ARTICLE 6
Organization and personnel

Operator has to:

- provide all necessary resources (human, organizing, financial, instrumental) for major-accidents prevention
- define roles, responsibilities and tasks
- define the interfaces and relationships between the different levels of organization for safety
- define requirements for information and training activities of workers
- ensure qualification and operative capacity of workers

- ARTICLE 7

  Identification and evaluation of major hazards

  Operator has to:

– adopt identification and risk evaluation procedures and the following risk reduction measures procedures

– ensure the correct implementation and use of procedures and measures

– demonstrate by written docs the safety analysis is carried out

– define safety criteria and requirements consistent with general objectives set in the policy

– update the analysis for changes, operational experience, development of knowledge, etc.

- ARTICLE 8
  Operational control

Operator has to:

– adopt specific procedures and instructions for:
  - operating conditions (normal, abnormal and emergency)
  - maintenance and inspections (consistent with reliability parameters assumed in safety analysis)

– register operational, maintenance and inspection data for monitoring performance, audit and review

- ARTICLE 9
  Management of change

Operator has to:

– adopt procedures to manage changes in process and organization
– plan and evaluate the changes, according with defined safety criteria and requirements (see art. 7)

– adopt documented approval procedures for changes

– ensure updating of technical docs, information and training of workers

- ARTICLE 10
  Emergency planning

Operator (with specific reference to major accidents hazard) has to:

- ensure the emergency management to:
  - check and control the effects of accidents
  - limit the damage to human health, environment, structures
  - apply the necessary measures
  - inform rescue services and other authorities involved
  - make the site ready for use to restore it
- arrange emergency equipment, alarm systems, resources
- define roles, tasks, responsibilities
- provide for tests, review, information and training of personnel

- ARTICLE 11
  Monitoring performance

Operator has to:

– verify the compliance with general and specific objectives, the safety criteria and the analysis base assumptions
– determine and adopt corrective measures for checked deviations, with following re-examination and verification
– make checks at least on:
  – accidents, near-misses, operational deviations or troubles evaluation
  – tests results and components and systems inspections
  – other specific indications
  – operational experience
  – functionality and operativeness maintenance

- ARTICLE 12
  Audit and review

Operator has to:

– adopt and implement procedures for policy and SMS systematic and periodic assessment trough *safety audit* conducted by internal or third expert inspector to verify:
  – effectiveness and suitability of the SMS and its application (in terms of structure and contents)
  – consistency with general and specific objectives and safety criteria and requirements adopted
  – compliance with laws, regulation, standard, etc.
  – need of corrective actions for SMS and modes to implement them

– plan, carry out, document and verify the effectiveness of corrective actions