TECHNICAL SESSION II

TOXIC SUBSTANCES AND HARMFUL PHYSICAL AGENTS IN MINES

"Mining Related Criteria Documents and Health Standard Program"

by

B. Thomas Scheib[1]

In the Federal Mine Safety and Health Act of 1977, Congress declared that one of the purposes of the Act, amongst others, was to "establish interim mandatory health and safety standards and to direct the Secretary of Health, Education, and Welfare and the Secretary of Labor to develop and promulgate improved mandatory health or safety standards to protect the health and safety of the Nation's coal or other miners." The need for the development and enforcement of safety and health standards was predicated on the knowledge that mining is a high-risk industry, and that unsafe and unhealthful conditions in mines which lead to injuries, illnesses, and occupationally related deaths in the workforce, cause undue "grief and suffering to the miners and to their families" as well as, impede and burden the development and growth of the mining industry and commerce in general.

There are, of course, those who believe that the implementation of regulations, including those concerned with miner health and safety, represents an unnecessary intervention on the part of the government and a burden to the development and growth of the mining industry. Such a position raises serious questions concerning the compatibility of productivity and safety and health. Actually, we can ill-afford to either jeopardize the safety and health of the mining workforce or impose severe constraints on the expansion of the mining industry in this country's quest for energy independence and to meet its ever increasing demand for metal and nonmetal commodities. What is needed is a genuine interest on the part of the mining industry to place the same emphasis on mine health and safety as it does on productivity, and for government to implement a regulatory program in line with the philosophy expounded by Mr. Robert Lagather, Assistant Secretary of Labor for Mine Safety and Health, "....we will not hesitate to adopt improved health and safety standards

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where hazards exist. However, we will also be sure that MSHA regulations are developed only in response to legitimate needs, that the regulations address those needs plainly, simply and in a way that minimizes the burdens imposed, and the reasonable and feasible alternatives for meeting the needs are fully considered."

Beyond the question of defining the legitimate regulatory needs of the mining industry, is the question of whether, once the needs are defined, regulations can be developed and implemented in sufficient time to significantly alter the course of health hazards to which the current mining workforce may be exposed. I am sure that many of you in the audience remember Mr. J. Allen Overton's keynote address at this conference last year in which he graphically displayed the obstacles and red-tape which stand in the way of mine development. Similar obstacles face us in the development and implementation of safety and health regulations in mining.

The first two figures show the steps necessary to complete a final health or safety rule as required by the Federal Mine Safety and Health Act of 1977. As shown in Figure 1, proposed mandatory safety and health standards may be initiated by a number of different sources including persons, organizations, or agencies outside of MSHA, groups within MSHA, and NIOSH. If a rule is proposed by a group other than NIOSH, the Secretary of Labor has no time limit constraints on when the proposal is published in the Federal Register unless the proposal is submitted to an Advisory Committee. In the case where an Advisory Committee is appointed, the Committee has up to 180 days to make final recommendations.

If NIOSH proposes a recommended health standard to MSHA, the Secretary of Labor must decide within 60 days whether or not to publish the recommended standard or refer it to an Advisory Committee. Under this second system, the time required to go from submission of a recommendation to publication of a proposed rule can be as little as 60 days or as great as 240 days.

Figure 2 shows the time required to go from publication of a proposed regulation to final rule making. If no public hearing is requested, a final rule can be promulgated within 120 days. However, if a public hearing is requested, the minimum time required for final rule making is approximately twice as great.

Superimposed on the statutory rule making requirements are a myriad of internal informational and decision requirements specified by Executive Order 12044. (Figure 3) These Executive Order requirements increase the likelihood that new regulations will take a long time to develop.

Indeed, the history of the development of MSHA health regulations indicates that from the identification of a regulatory need to the promulgation of a final rule requires years of work. Consider two recent actions

FIGURE 1

MANDATORY SAFETY AND HEALTH STANDARDS

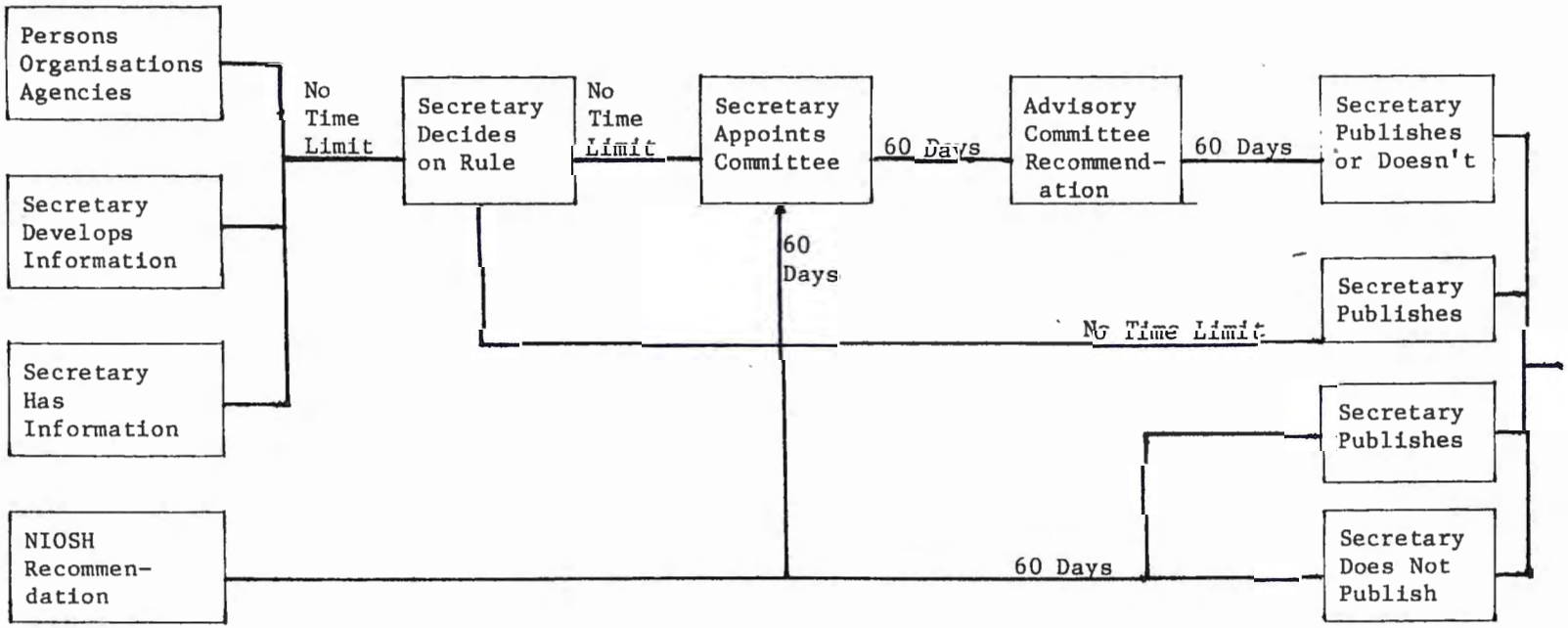
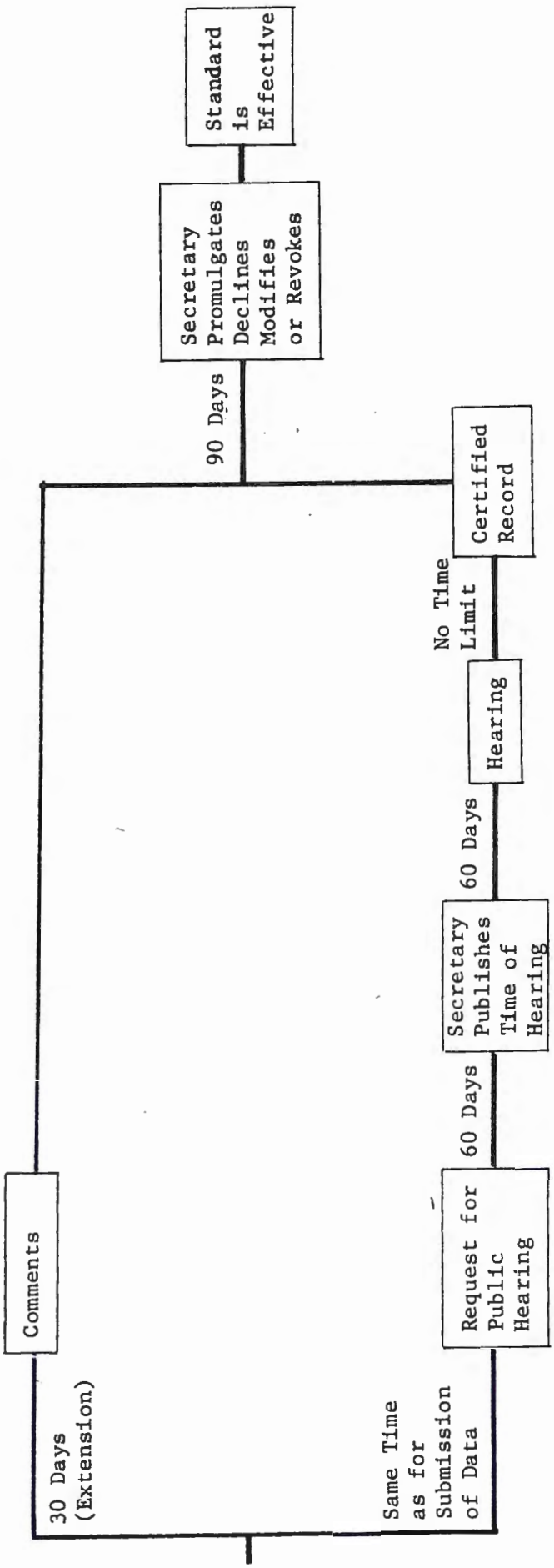


FIGURE 2

FLOWCHART FOR PROMULGATION OF MANDATORY SAFETY AND HEALTH STANDARDS



on coal mine health regulations. The first example is the amendment to the coal mine noise regulation permitting the use of noise dosimeters to assess coal miner exposure, which went into effect in October 1978. This amendment required over three years to promulgate despite the fact that health regulations affecting the metal/nonmetal mining segment of the industry had permitted dosimeter evaluation of miner noise exposure since August 1974.

Revisions to the coal mine health standard on exposure to coal mine dust represent another example of the inordinately long time required to promulgate health regulations. The revision to the coal mine dust standard, stimulated, in part, by litigation which challenged the original definition of respirable coal mine dust, was initiated in the later part of 1976. Public hearings on the proposed rules were held last summer, and, as yet, no final rule has been published.

The mining industry faces an era of rapid expansion and growth, an era in which a larger workforce will be exposed to potential health hazards which currently exist in the industry and to hazards associated with new technologies which will be applied to the extraction and processing of coal and other mined commodities in the future. It is doubtful that the regulatory process, by itself, has sufficient breadth or adequate timeliness to fully protect the health and safety of the miner. A greater role in health and safety will have to be assumed by the industry and by the workforce employed in the mining industry. It is with this knowledge and experience that the current NIOSH criteria and standards development program has been conceived.

As shown in figure 4, the heart of the criteria development program is the identification of potential health hazards based upon results of the NIOSH mining surveillance program described earlier this morning, and information obtained from MSHA inspectors, employers and employees in the industry, and independent researchers. Where information is limited on the extent and severity of exposure to a particular health hazard, the industry will be informed of the health effects associated with overexposure, and the proper means for assessing and controlling the hazard in mining environments through profiles on individual chemicals and processes, and the development of model control programs.

Where information is available on both the extent and severity of exposure or where current regulations on chemical and physical agents or health practices affecting a large segment of the workforce are not sufficient to protect the health of the miner, new or revised standards

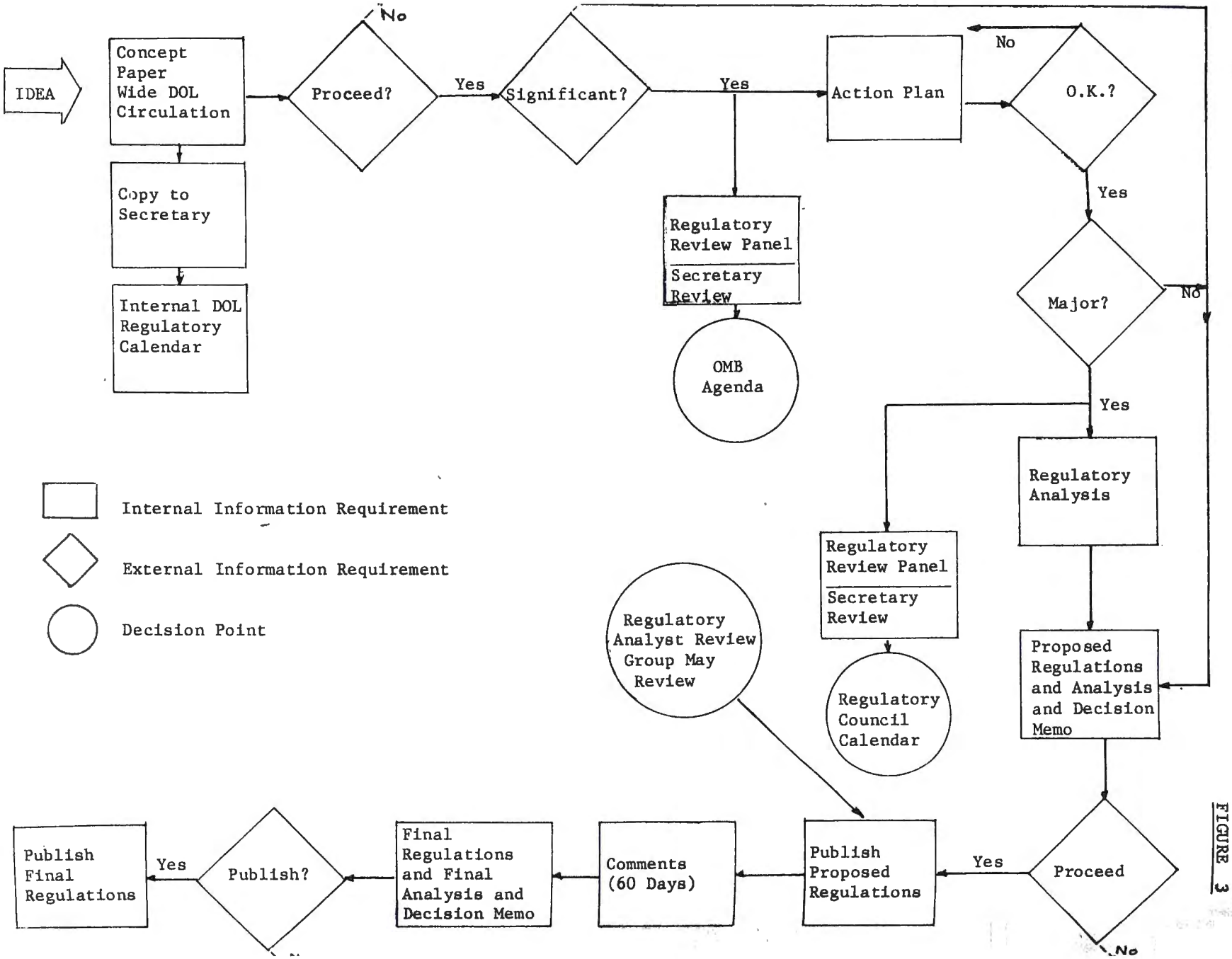

IDEA
Concept Paper Wide DOL Circulation
Proceed?
No
Yes
Significant?
Yes
Action Plan
No
O.K.?
Yes
Copy to Secretary
Internal DOL Regulatory Calendar
Regulatory Review Panel
Secretary Review
OMB Agenda
Major?
No
Yes
Regulatory Analysis
Regulatory Review Panel
Secretary Review
Regulatory Council Calendar
Regulatory Analyst Review Group May Review
Proposed Regulations and Analysis and Decision Memo
Internal Information Requirement
External Information Requirement
Decision Point
Publish Final Regulations
Yes
Publish?
Final Regulations and Final Analysis and Decision Memo
Comments (60 Days)
Publish Proposed Regulations
Yes
Proceed
No

FIGURE 3

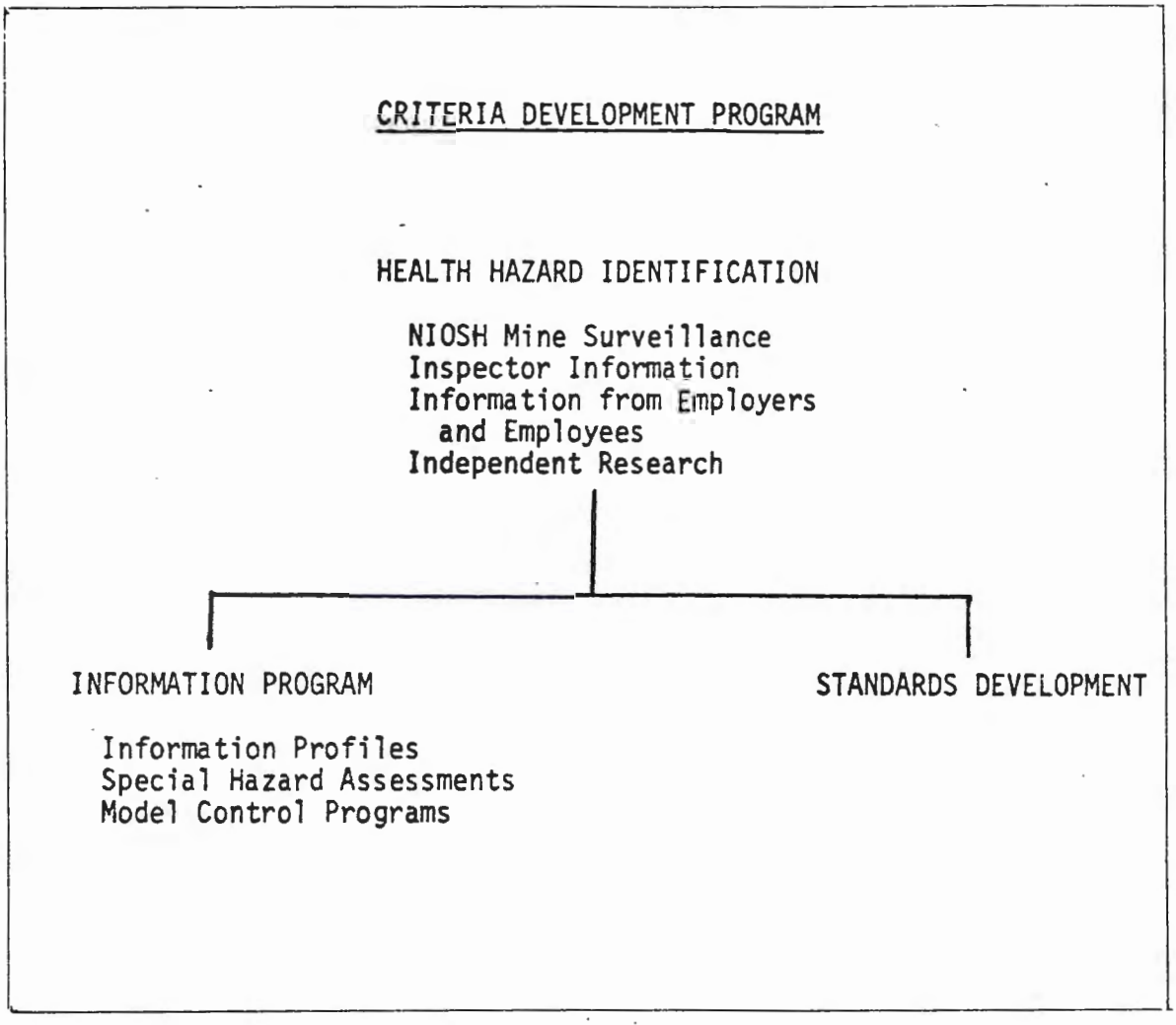

CRITERIA DEVELOPMENT PROGRAM
HEALTH HAZARD IDENTIFICATION
NIOSH Mine Surveillance
Inspector Information
Information from Employers and Employees
Independent Research
INFORMATION PROGRAM
Information Profiles
Special Hazard Assessments
Model Control Programs
STANDARDS DEVELOPMENT

FIGURE 4

will be developed. These recommended standards will include criteria and proposed standards addressing the following issues (Figure 5):

1. Permissible Exposure Limits
   a. Full-shift
   b. Short Term (15 Minute)
   c. Maximum (Imminent Danger)
2. Labelling and other Appropriate Forms of Warning
3. Relevant Symptoms Associated with Excessive Exposure
4. Appropriate Medical Treatment
5. Precautions for Safe Use and Handling
6. Protective Equipment
7. Control Procedures
8. Sampling and Monitoring
9. Type and Frequency of Medical Examinations
10. Medical Criteria for Reassignment
11. Medical Record Requirements

Currently, the Mine Health Standards Branch has two projects under development as part of its Current Information Program (Figure 6) Mine Sanitation and Mill Reagents. As part of the Mine Sanitation Project, a document on a Model Mining Sanitation Program will be produced which will include information and recommendations enabling the mine operator to design sanitary facilities and implement sanitary practices which comply with current mine health regulations on drinking water, sanitary toilet facilities, and bath and change-house facilities. Included in this document will be information on meeting the special needs of the woman miner. It is anticipated that the mine sanitation project will be completed early in the Fall. Notification of the completion and availability of the document will be provided in the MSHA Magazine and other mining publications.

The mill reagents project will produce information profiles on chemicals used in flotation, separation, benefication, and collection of

COMPONENTS OF A RECOMMENDED STANDARD

- PERMISSIBLE EXPOSURE LIMITS
  - Full-shift
  - Short-term (15 minutes)
  - Maximum (Imminent Danger)
- LABELLING AND OTHER APPROPRIATE FORMS OF WARNING
- RELEVANT SYMPTOMS ASSOCIATED WITH EXCESSIVE EXPOSURE
- APPROPRIATE MEDICAL TREATMENT
- PRECAUTIONS FOR SAFE USE AND HANDLING
- PROTECTIVE EQUIPMENT
- CONTROL PROCEDURES
- SAMPLING AND MONITORING
- TYPE AND FREQUENCY OF MEDICAL EXAMINATIONS
- MEDICAL CRITERIA FOR REASSIGNMENT
- MEDICAL RECORD REQUIREMENTS

FIGURE 5

INFORMATION PROFILES

- Sanitation
- Mill Reagents

FIGURE 6

minerals. Each profile will contain information on the physical-chemical characteristics of the agent, its use, toxicity, signs of overexposure, medical monitoring, and proper work practices and controls. A summary of the findings will be published in the MSHA Magazine and other mining publications. People interested in specific reagent profiles can then contact NIOSH to receive copies.

During the remainder of this fiscal year and into the next, NIOSH and MSHA will perform a regulatory review on five of the 35 chemical and physical agents identified in the May 1979 NIOSH Mining Surveillance List of Potentially Toxic Occupational Exposures. As shown in figure 7, NIOSH is taking the lead in two areas - asbestos and silica - while MSHA is taking the lead in two other areas including welding fumes and radiation. The fifth area, noise, has yet to be assigned to either agency.

The outcome of these regulatory reviews is largely unknown at this time. They could extend from small changes in sections of current regulations designed to improve the protection afforded by existing standards, to completely new standards which address the factors I discussed previously. One thing appears certain, and that is that the Department of Labor will make a special effort during FY-80 to set a new standard for occupational exposure to silica. The Department has initiated economic impact and technical feasibility analyses of a number of different proposed exposure limits for silica. Following the completion of these analyses a new OSHA standard will be proposed which could have a significant impact on current MSHA regulations.

Two other projects which deserve special mention include a review of data and information on the incidence of Coal Workers Pneumoconiosis (CWP) in surface coal miners and a review of current regulations and practices concerned with emergency medical care at mines. As part of the surface coal miner CWP project, available epidemiologic data was reviewed to determine the likelihood that surface coal miners would develop early signs of coal workers pneumoconiosis. A summary of findings together with the criteria for including at least a portion of the surface coal miners in the National CWP monitoring program was submitted to the Mine Safety and Health Administration. MSHA is currently conducting a review of this report for possible future regulatory action.

The project on emergency medical care at mines was designed to evaluate the effectiveness of current mining EMC regulations and programs in meeting the emergency medical needs of the mining workforce. To date, we have completed a comprehensive review of available accident, injury, and illness data as well as a review of International, Federal, and State regulations on emergency medical care. In addition, NIOSH has completed a contract effort and has conducted site visits to

REGULATORY REVIEWS FY-79 AND -80

NIOSH	MSHA	UNASSIGNED
Silica	Welding Fumes	Noise
Asbestos	Radiation	

FIGURE 7

CURRENT STANDARDS DEVELOPMENT PROJECTS

- Surface Coal Miner CWP
- Emergency Medical Care

FIGURE 8

several Eastern and Western coal and metal/nonmetal mines to assess the state-of-the-art. Based upon this information we are drafting criteria for new minimum, EMC standards which will consolidate the different requirements affecting coal and metal/nonmetal mining and which will lead to improved personnel preparedness and program effectiveness to deal with the high rate and severity of injuries and illnessed encountered by the mining workforce today.

In summary, it is apparent that this country is heading into a period of high demand for mined commodities which will entail a growth in the workforce and a rapid expansion of new technologies for extraction, processing, and use of these commodities. As this growth materializes, the already high concern for miner health and safety will increase even further. The current trend away from government regulation and the evident delays in promulgating and implementing effective health regulations raise serious questions on whether or not a program based strictly on the development of health regulations can meet the health and safety needs of the mining industry now, and into the future. It is in this context that NIOSH has conceived its program for criteria and standards development; a program which stresses, on the one hand, the identification of legitimate health problems in the mining industry and the development of health regulations to solve these problems, and, on the other, the development of information profiles on potential health hazards where extent and severity of exposure are unknown. The balance of this two-tiered program is in the hands of the industry. Where the industry anticipates potential health problems and acts to control these problems through the application of information available from NIOSH and other sources, regulations will be unnecessary. However, where legitimate health problems are identified and little is being done to control the problem, health regulations will be promulgated and implemented.

Editor's Note: The Question/Answer Period following Mr. Scheib's presentation was not recorded.

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