




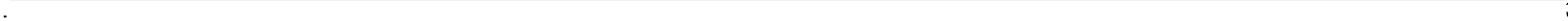




















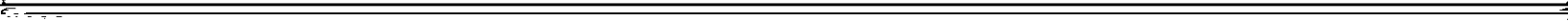








THE COSTS OF UNCERTAINTY:
REGULATING HEALTH AND SAFETY
IN THE CANADIAN URANIUM INDUSTRY

By

EDITOR'S FOREWORD

The CRS working paper series examines the policy implications of current issues and problems relating to mineral resources in Canada. This study represents



SUMMARY

Federalism, and particularly federal/provincial jurisdictional relationships, have led to considerable uncertainty in the regulation of occupational health and safety and of environmental protection in the Canadian uranium mining industry.

The two principal uranium producing provinces in Canada are Saskatchewan and

RÉSUMÉ

Le fédéralisme, et plus particulièrement les relations juridictionnelles

Le fédéralisme est un régime de répartition des pouvoirs entre un gouvernement central et des gouvernements régionaux. Les relations juridictionnelles sont les relations de compétence entre ces différents niveaux de gouvernement.

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Au cours de la prochaine décennie, le secteur des ressources naturelles donnera vraisemblablement lieu à bien des conflits et à bien des négociations entre gouvernements. Toute solution apportée à cette question spécifique de réclamer

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INTRODUCTION

tional issue remains controversial and uncertain, and policy goals remain unchanged.

The basic recommendation of this study is that the jurisdictional issue be resolved with all possible speed. Although almost any approach is bound to be

1977-78. It then outlines the provincial criticisms of the bill, and the federal response to them, explaining why the bill was allowed to die on the order paper.

Chapter 3 is the heart of the study. It outlines the responses of the two provincial governments to the jurisdictional uncertainty which prevailed in the wake

2. BACKGROUND TO THE PRESENT REGULATORY SYSTEM

This chapter is divided into two parts. The first gives the background necessary to understand the technical and political problems with which this paper is concerned. It outlines the types of hazards that exist in the uranium mining sector, indicating the differences between the Ontario and Saskatchewan mines.

Two different sorts of radiological hazards must be considered: the exposure of the skin to gamma radiation from the uranium ore itself, and alpha radiation from the inhalation of radon and thoron gases and their daughters. Gamma

The Early Regulatory Regime

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Atomic Energy of Canada, Limited (AECL) was created in 1952 pursuant to section 10.1(a) of the Atomic Energy Control Act. Two years later, when AECL was already much larger than the AECB in budget and personnel, it was decided that the act should be amended so that AECL would report directly to the Minister of Energy.

federal and provincial regulations, those of the AECB were legally paramount. Thus it would have been reasonable to assume that the AECB would supplement any provincial regulations that appeared to be inadequate for the task.

In fact, however, the AECB did not develop any supplemental regulations, even after its officials became convinced that a significant gap existed in the area

New Democratic Party, and to a United Steelworker's strike at the Elliot Lake

The first problem was traced to the difficulties of maintaining adequate health records for a transient population, inadequate monitoring technology, and inadequate personnel and funds for collecting, coordinating and analyzing epidemiologic

With regard to jurisdictional uncertainties, Ham had much more to say about intragovernmental reforms in Ontario than about intergovernmental reforms. Ham placed a considerable amount of the blame on the nature of the old federal-provincial arrangement. However, beyond the recommendation that AECB expand into the mining sector, the only intergovernmental change recommended was that the

workers, and so came under the board's responsibility.⁴⁵ There could be no

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In the same year, work began on the Occupational Health and Safety Act (Bill
70). ~~Bill 70 was the predecessor of Bill 120. Essentially, Bill 70 strengthened several~~

ciple that 'where feasible, the promotional and regulatory aspects of nuclear and uranium policy should be the responsibility of different departments'.⁵⁷ This principle was extended by Bayda to environmental protection, with its re-

The Nuclear Control and Administration Act of 1977 (Bill C-14) constituted the federal government's attempt to reply to the problems raised by the Uranium Commission

sion, and the subsequent developments examined in the last chapter. It had two broad goals. First, it attempted to formalize and clarify the AECR's new role

now bill it is necessary to distinguish between changes in the AECB's mandate

The Provincial Response

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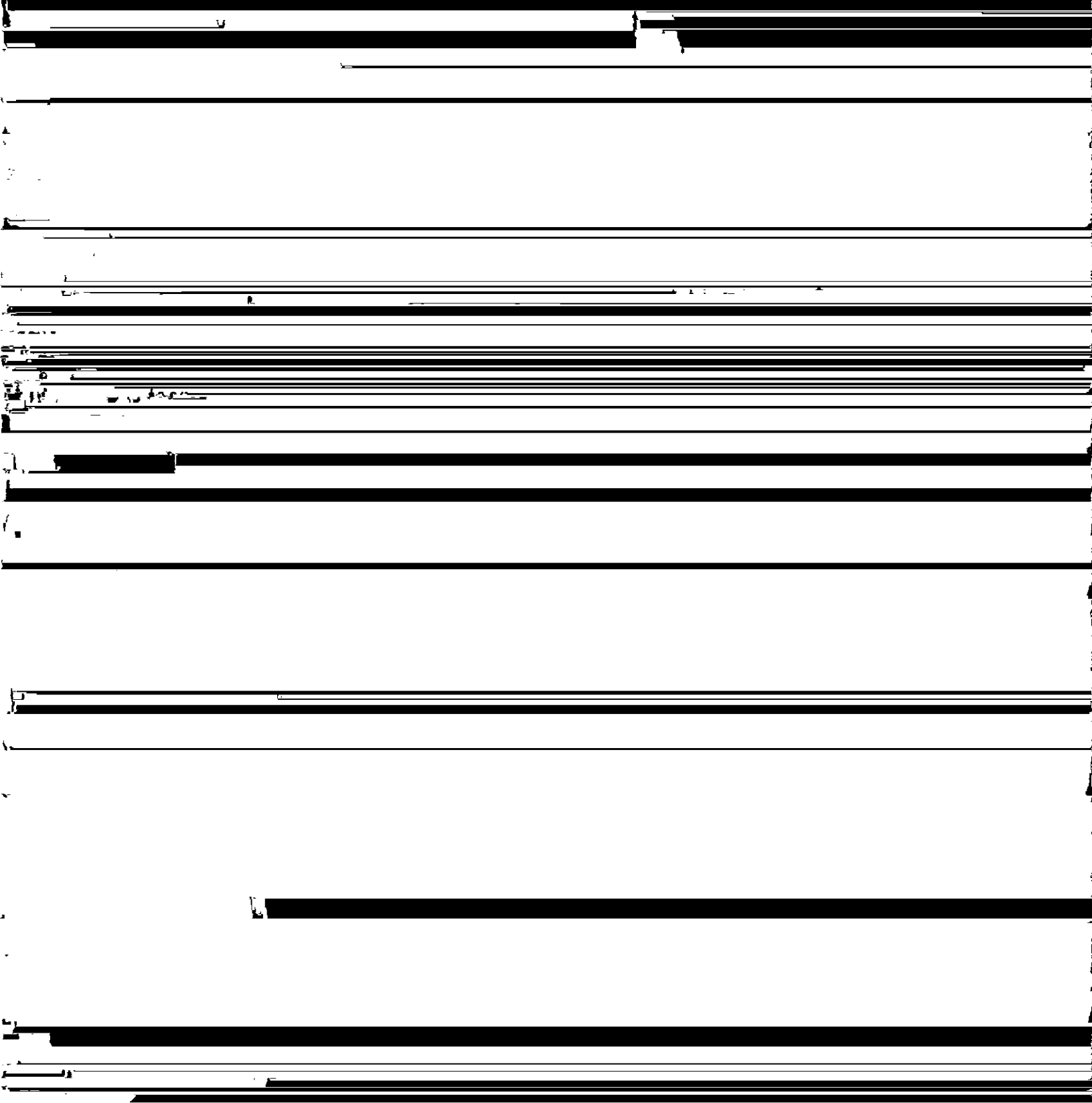
provision proposed the same that there is a...

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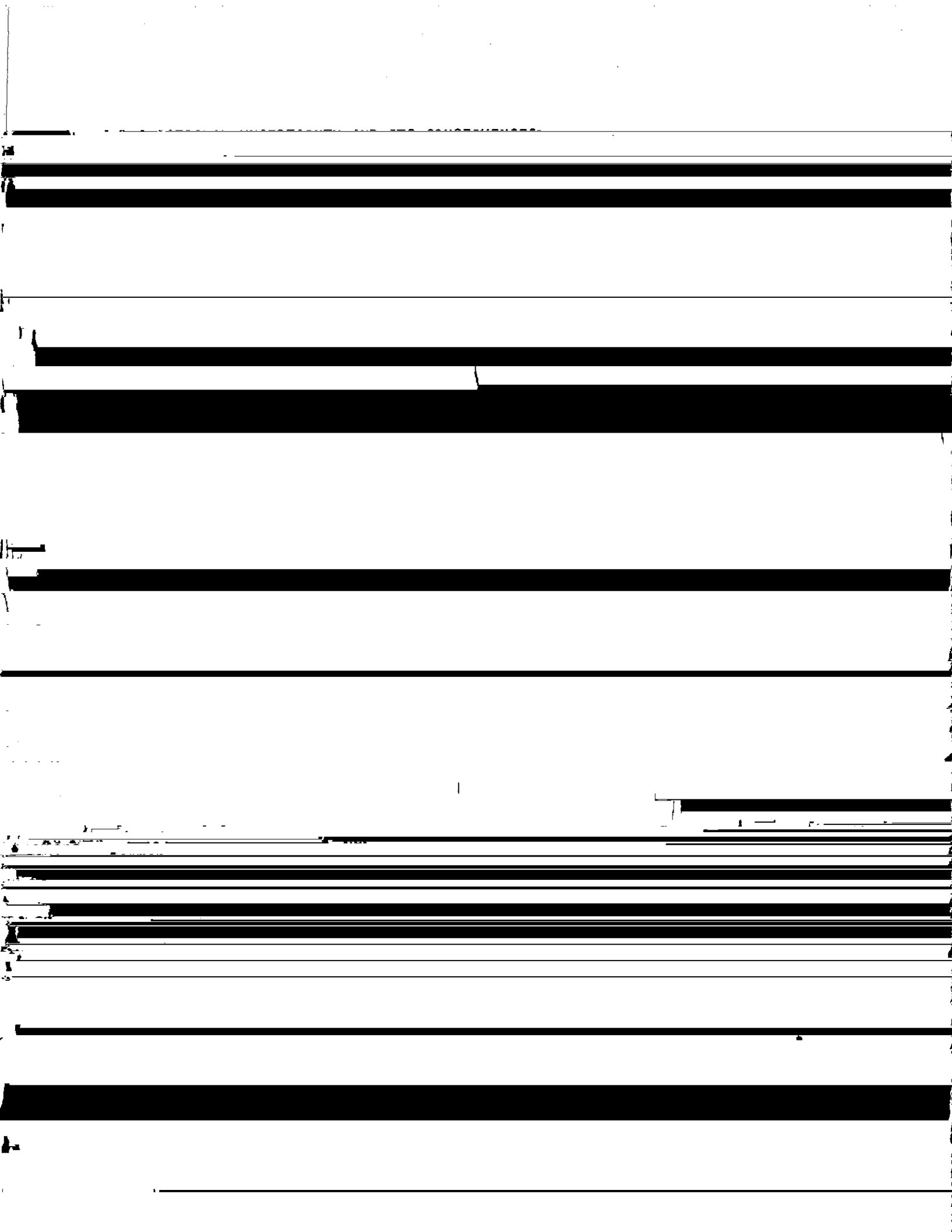
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The provincial position on the bill was raised by Saskatchewan in the course of the October-November Constitutional Conference, but Saskatchewan's detailed analysis of C-14 was put forth in the November meeting of federal and provincial mines ministers. In late October, the minister of Energy, Mines and Resources was pushing to have the modified bill placed high on the agenda for the new



In those areas which do not fall under one or both of the first two categories, the AECB will still face a financial limitation. That is, it is more difficult to get an adequate budget from the Treasury Board when the AECB cannot say that the expensive new procedures and responsibilities that it is taking on were assigned by the government.

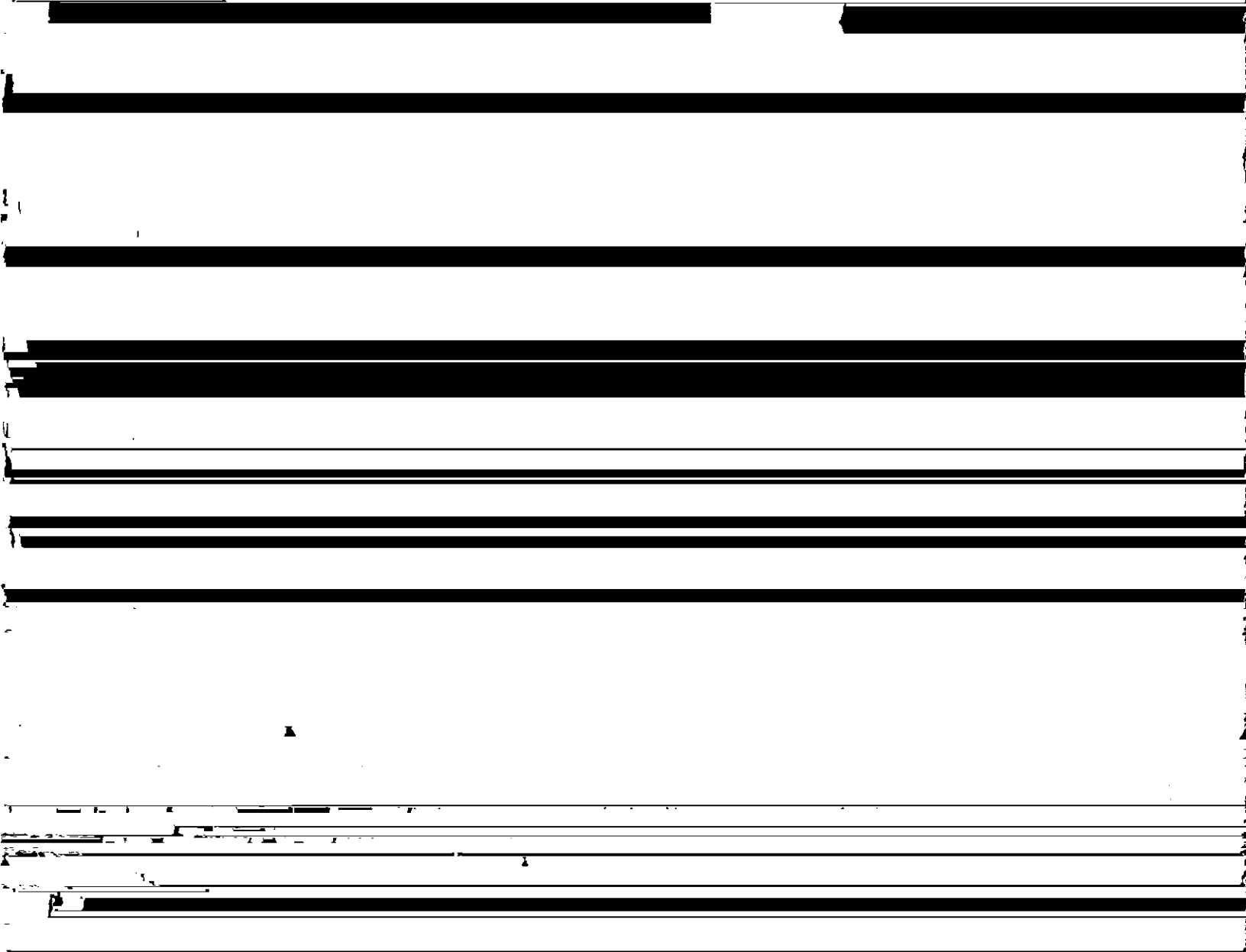
Finally, there are legal limitations. Changes in the board's regulations have a different status from changes arising from new legislation. The combined result



resulting in duplication of work and, in the case of enforcement, the possibility of considerable confusion and delay in prosecutions.

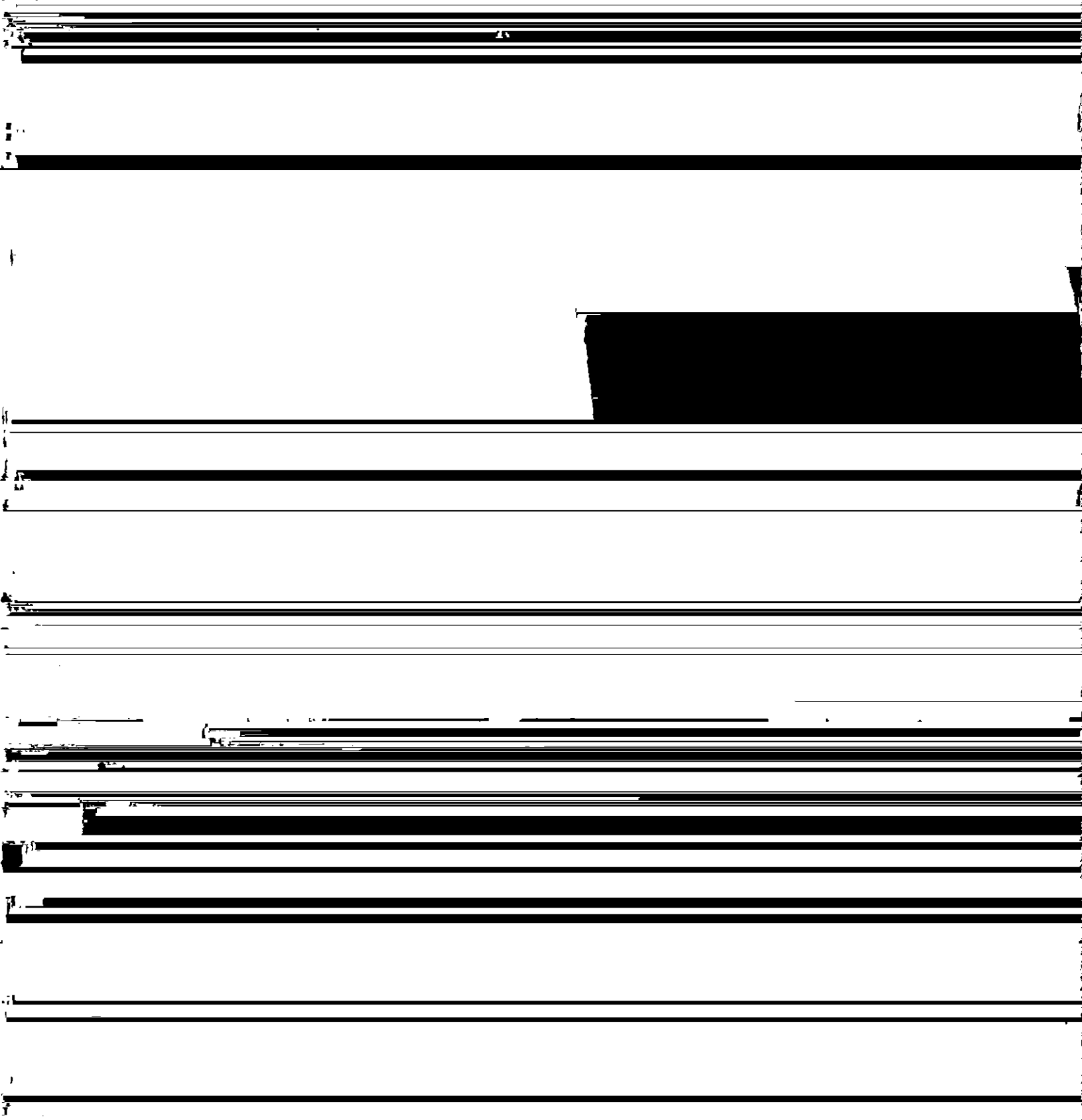
Both sections of this chapter will focus primarily on radiological OHS and EP hazards. This is not to suggest that conventional hazards are in some way less important. The Ham Commission (see chapter 1, p. 8) estimated that five times as many lives were being lost due to conventional hazards as could be attributed to radiation-induced cancer. Nonetheless, there are reasons for my choice of focus and I list two most important.

First, it is the radiological hazards which distinguish the uranium mines from other mines in terms of dangers to the miners and the environment. This is



ure of both levels of government to assume the financial burden of an adequate research and development program.

As with the administrative reforms proposed in Bill C-14, it has proved impos-



know. It is therefore impossible to say exactly how much ought to be spent. We

Consequently, the second breed research area is a necessary complement to the

The personal dosimeter case is particularly illuminating in view of the fact that the AECB officially endorses the 'As Low As Reasonably Achievable' (ALARA) principle with regard to the utilization of monitoring and safety technologies, as well as standards. ALARA was a principle developed by the International Commission on Radiological Protection (ICRP) to compensate for the inadequate state of existing scientific knowledge concerning the risks associated with ionizing radiation exposure. In essence, it states that exposure limits should be continually lowered (i.e., standards made more stringent) whenever, and as soon as, this becomes 'reasonably achievable'. The problem arises, of course, in the in

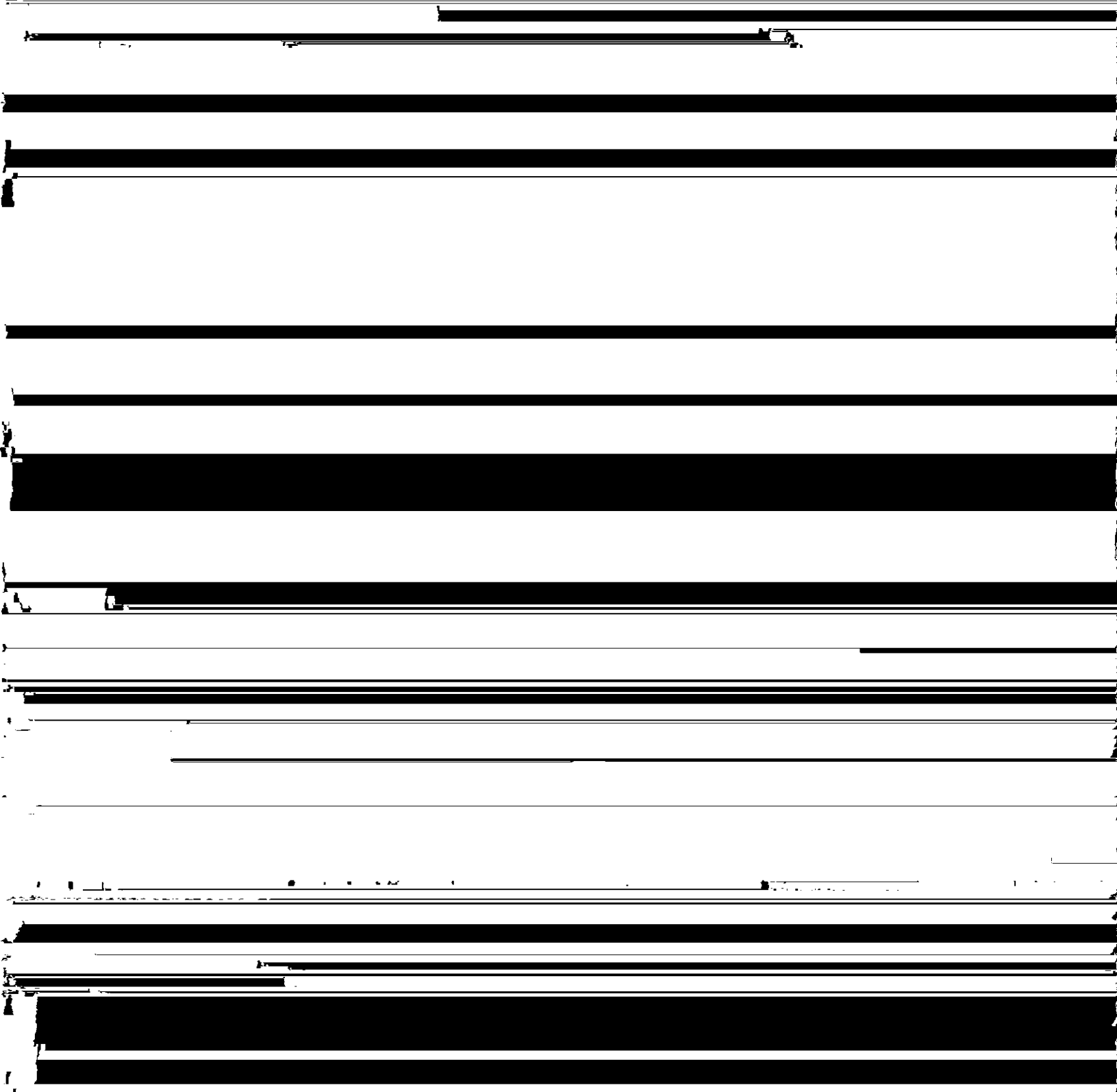
If the AECB is not adequately funded to undertake expensive research and development which appears to be the case then why did it not require industry to

monitoring was clearly provided for under section 12 of the AECB's 1974 regulations. Conventional OHS, however, was subject to the concerns expressed above under the existing arrangements. Ontario argued that provincial legislation should be directly referenced in a new set of regulations, so that provincial standards would become the board's standards for Ontario, and provincial inspectors would have the same legal status, whether monitoring radiological or conventional hazards.¹⁰¹

Thus, shortly before it became apparent that C-14 would not receive second reading, the AECB referred a written request for part IV coverage from the the union to the federal justice department. In October 1978, the Department of Justice delivered the opinion that since the AECB had not issued regulations governing

initiate a smooth transition from the federal-provincial arrangements in the memoranda. Thus, when Bill 70 was finally proclaimed in Ontario on 1 October 1979, less than a month after amendments to Labour Canada's regulations were gazetted, the Ontario Ministry of Labour was informed that the federal regulations would not be amended to reference Bill 70. The target date for the new federal regulations was May 1980.¹¹²

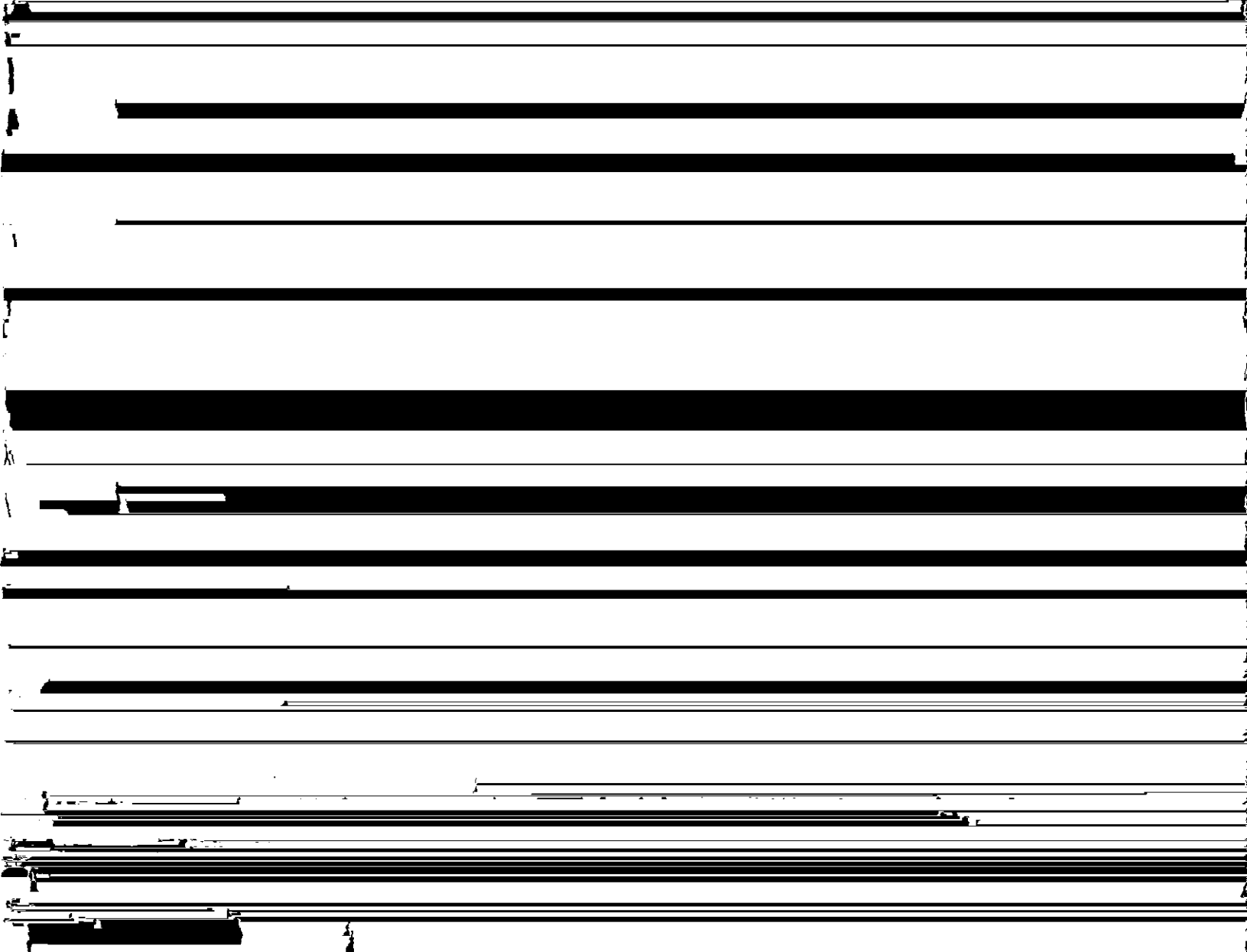
This plan was approved in April 1979 when the Steelworkers advised Labour Canada



Since Ontario's Ministry of Labour has no such standards either, and would not apply them to uranium mines even if it did, a gap exists.

The Saskatchewan situation is different. At present there is no gap because their Department of Labour has silica dust regulations and insists that they be applied to the uranium mines. However, the AECB is reported to be in the process of developing its own silica dust standards in order to plug the regulatory gap noted above. Present information indicates that the maximum permissible limits likely to be incorporated in the AECB regulations will be twice as high (i.e. lenient) as those which presently exist in Saskatchewan.¹¹⁵ It appears, therefore, that there is a real possibility that a court could use the AECB's paramountcy to overturn the more progressive Saskatchewan regulations.

A parallel problem exists with respect to radiological OHS standards. The maximum levels of exposure permitted by the AECB are 4 WLM¹¹⁶ of exposure to radon daughters and a whole-body ionizing (gamma) exposure of 5 rems per year. Current federal legislation permits the equivalent exposure of radiation workers to



Compliance

[REDACTED]

isolation directly in the AECB's regulations, as Ontario had argued it should,

~~and that the licensing process was virtually unenforceable. 122 Thus, if~~

the AECB wanted to penalize a mining company for some infraction, its only sanction is to suspend or refuse to renew that company's license - virtually the same crude enforcement technique provided by Saskatchewan's surface lease requirements. Once again, Ontario has no alternative to this process, while Saskatchewan's is no more effective than the AECB's from a practical

However, the example of Eldorado at Uranium City, and the levels of radon daughter exposure achieved there without any surface lease provisions, is directly relevant. As one Saskatchewan official said: 'The odds of a company being able to proceed against a hostile provincial government are pretty slim. They know that we will get them somewhere along the line.'

~~The Ontario government's approach effectively constitutes the existence of a~~

These recommendations, as well as several more specific ones, were subsequently
echoed and endorsed in the Final Report of the Senate Commission 133 which con-

from unclear lines of accountability. By far the largest single contributor to research and development in this area is the Canadian Centre for Mineral Energy

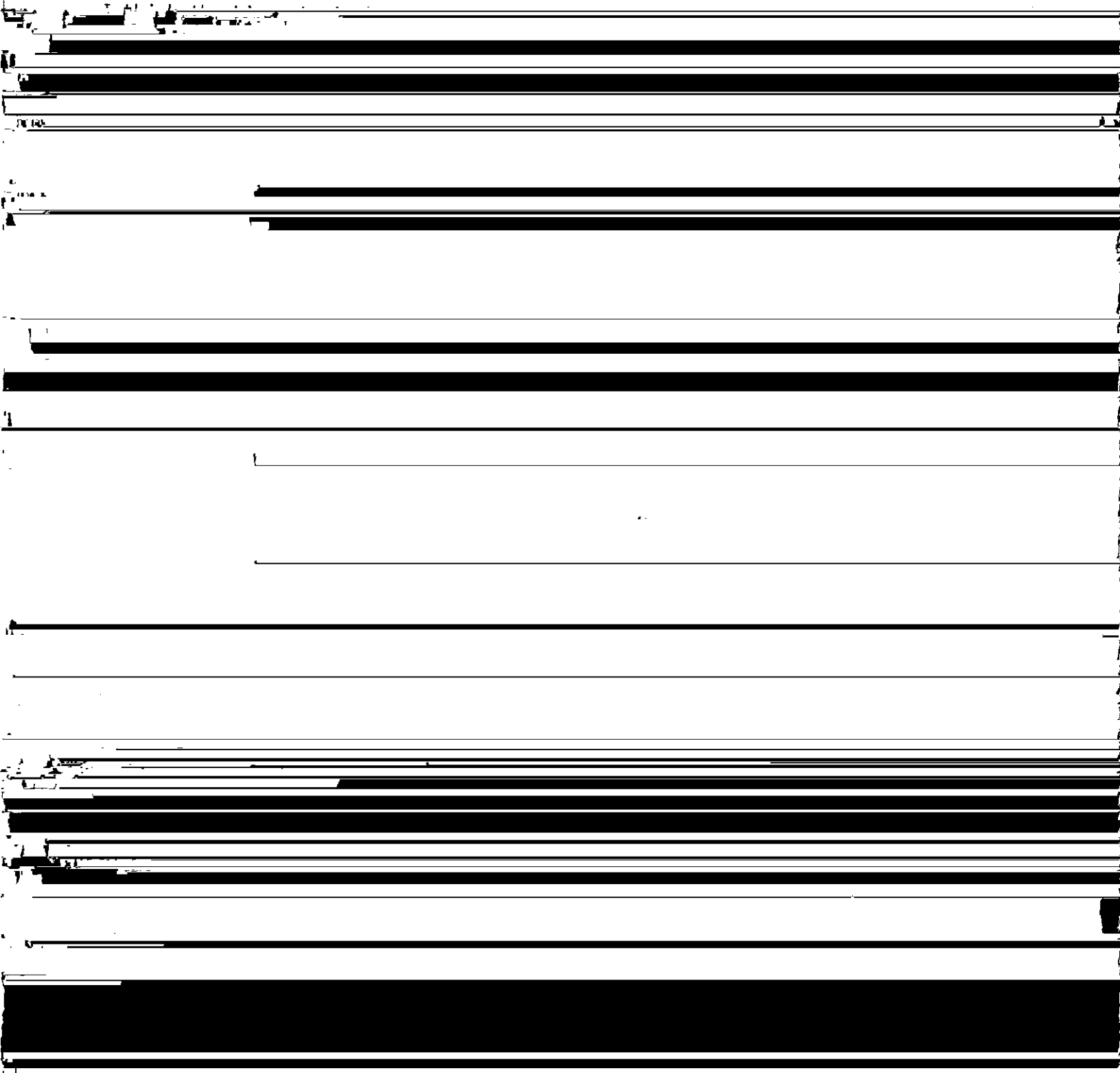
good reason. The fund forces issues to the surface that, from the mining company's perspective, are better forgotten. As Ontario's Deputy Minister of the Environment argued:

The province and most of the jurisdictions in Canada...have a nice history of deciding to set up funds to look after tailings after the companies are out of business, which means that the general taxpayer is faced with it. So I think ...that some sort of fund is necessary and we are only hedging as to its exact form at this stage. Otherwise, you can rest assured that unless we have marvelous breakthroughs in technology in the next 40 or 50 years that at some stage the province is going to wind up directly funding

Generally, the federal government agrees to establish national baseline effluent and emission standards for specific industrial groups and specific

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ronmental Protection Act.¹⁴⁶ The result, as Ontario's Deputy Minister of the Environmental has noted, was a report which, even after three years of work 'did not have the same precision, for example, that the Ham report had, which gave you some clear idea of what needed to be done...they backed off...from making any major decisions on the big issues, and for that reason they were very conservative.¹⁴⁷ When asked to further explain why 'convervatism' had displaced 'conservationism', he said:

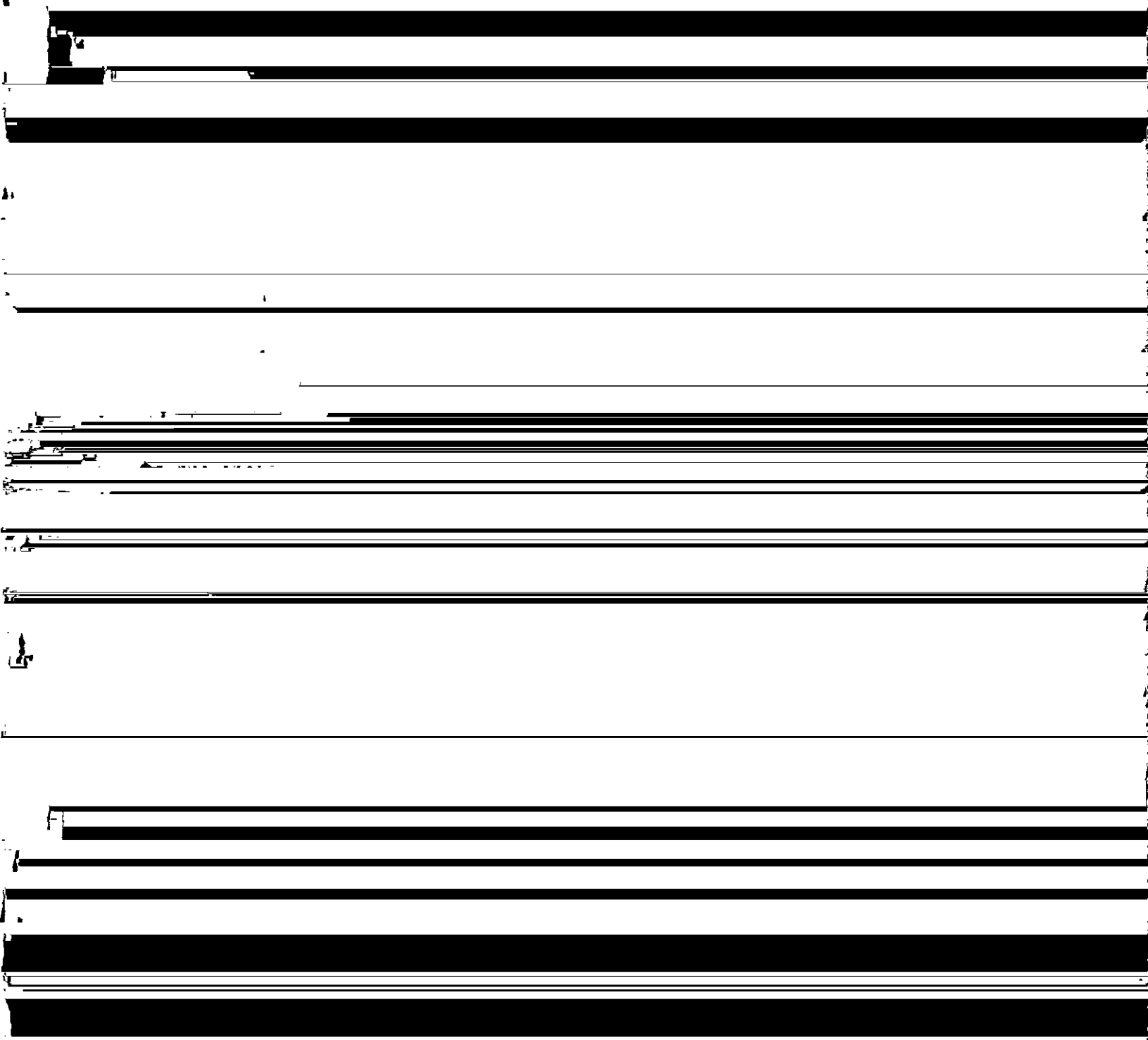


All the recommendations were accepted by the government and have since been implemented. Measures ii and iii were required for the Cluff Lake mine itself.

filtered out in the other process may well redissolve at a later date.¹⁵⁸ To illustrate the significance of this distinction, analysis in one area of Elliot Lake found that while the dissolved radium concentration was between 3 and 5 pCi/l (picoCuries per litre), the total radium concentration was about 26 nCi/l.¹⁵⁹

control order: and what is possible given the constitutional situation is

for its own Crown corporations and for the administration of all aspects of Indian reservations. These exemptions from provincial environmental regulations



Conclusions

In this chapter we have seen significant differences in the sorts of regulatory

5 INTO THE FUTURE

We have already seen that the administrative difficulties of coordinating the activities of two levels of government have been considerably augmented by the fact that the AECB is organized on a sector basis while the provincial regulations are organized on a category basis. So, for example, if the AECB had not

toward a category approach as they have sought to separate the regulatory from

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On balance, I don't think so. While the presence of the AECB may be unnecessary, or even a source of confusion, some federal presence cannot be avoided.

Aside from the very real international security considerations the FD aspects

If the regulations of both levels are clearly legal, the question remains as to which regulations should take precedence in cases of overlap. This brings us to the issue of paramountcy: concurrency always implies either federal or provincial paramountcy. As we have seen with the de facto concurrence that already exists in this sector, the problem with federal paramountcy has been that it creates a ceiling rather than a floor. What we really want is just the reverse: we should try to replicate the model of the existing federal-provincial EP Accords in the OHS and EP fields of the uranium mining sector. The federal government will establish a set of minimum standards which must be met, and the provinces may formulate and directly enforce more stringent standards should

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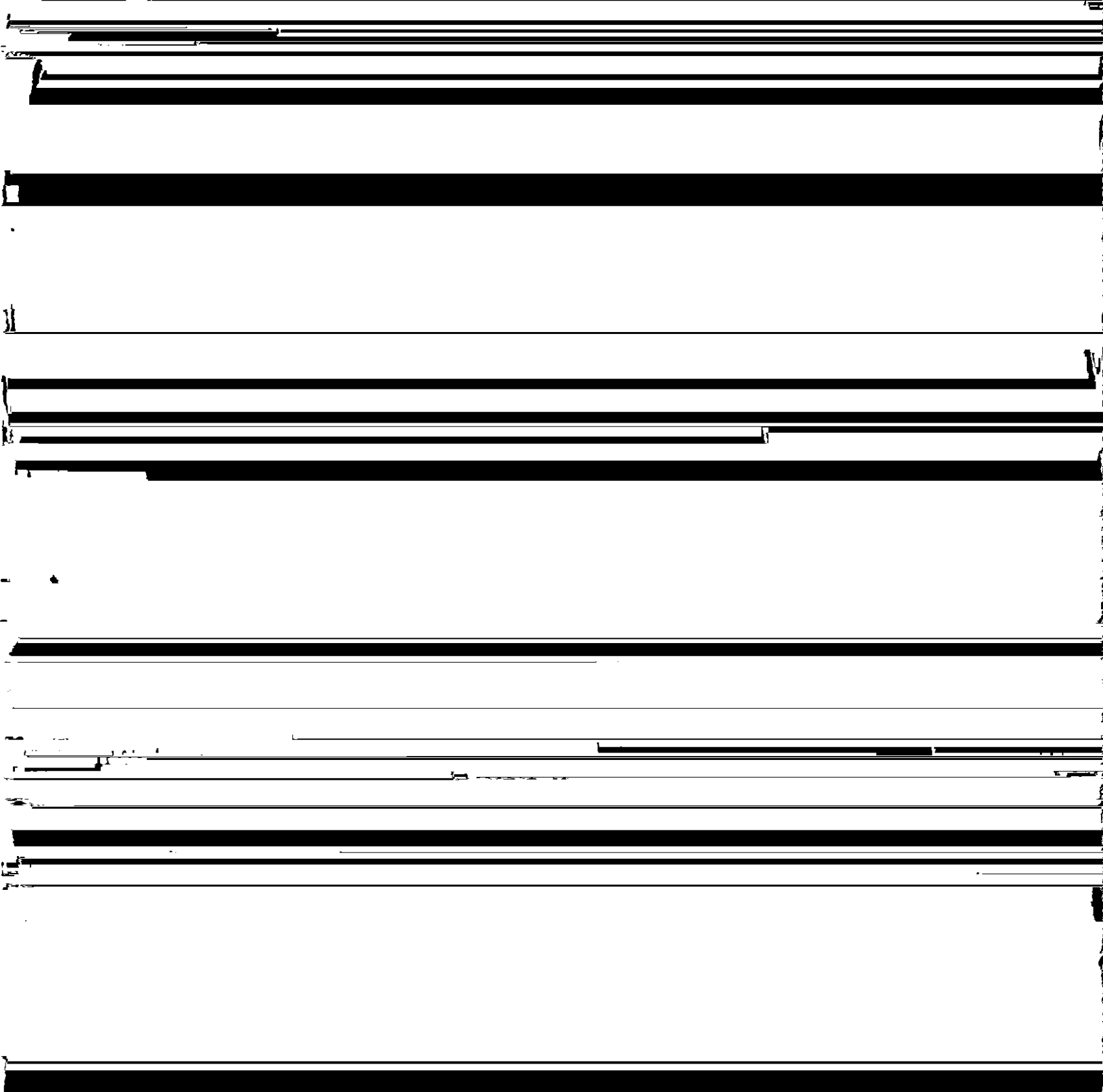
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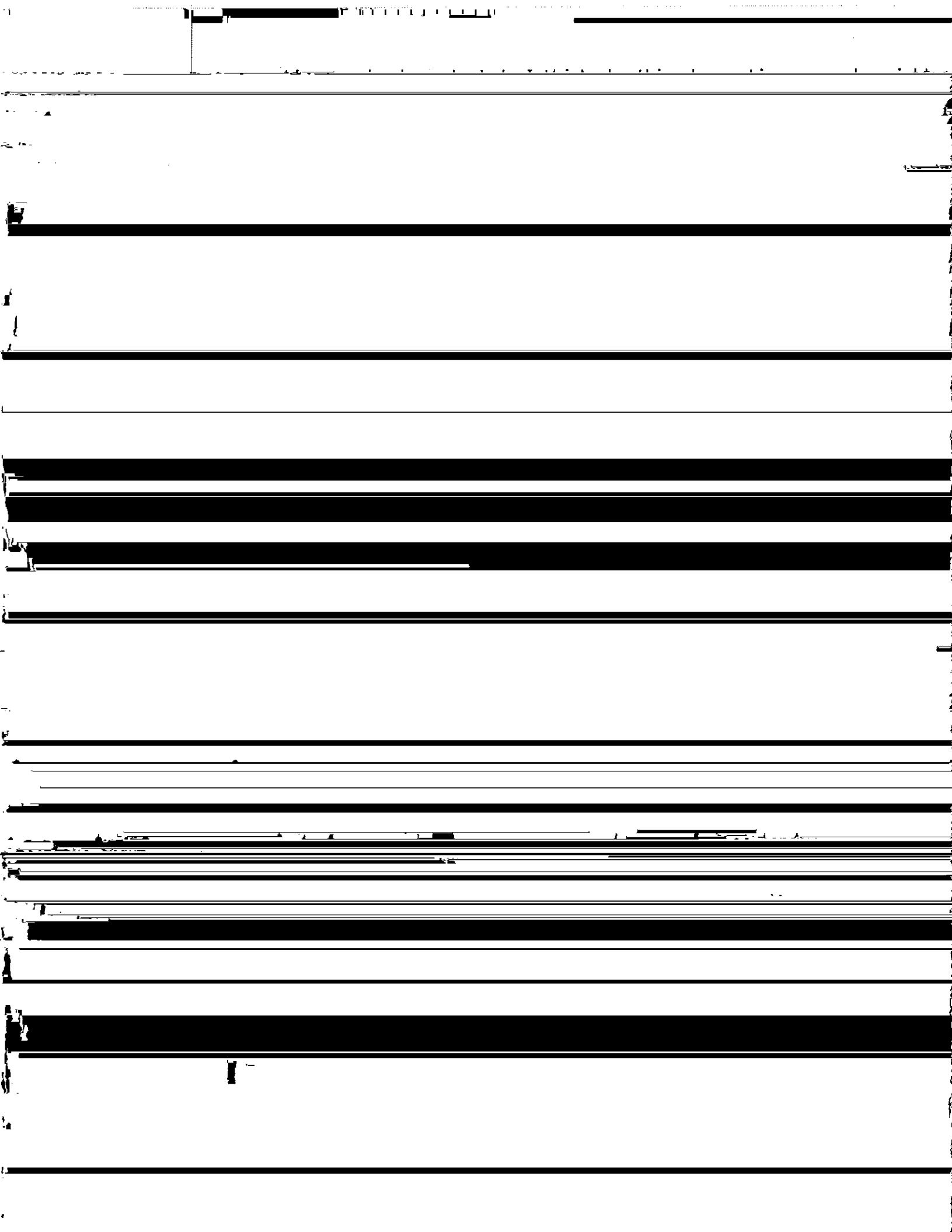
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evidence to suggest that parallel problems do exist, and would therefore recom-

end that it is likely that this will be confirmed for the autonomous sector as





The task of a normative theory of regulation is therefore to develop and justify the criteria for making these determinations. Put in its crudest form, how do we justify decisions which must be made concerning:

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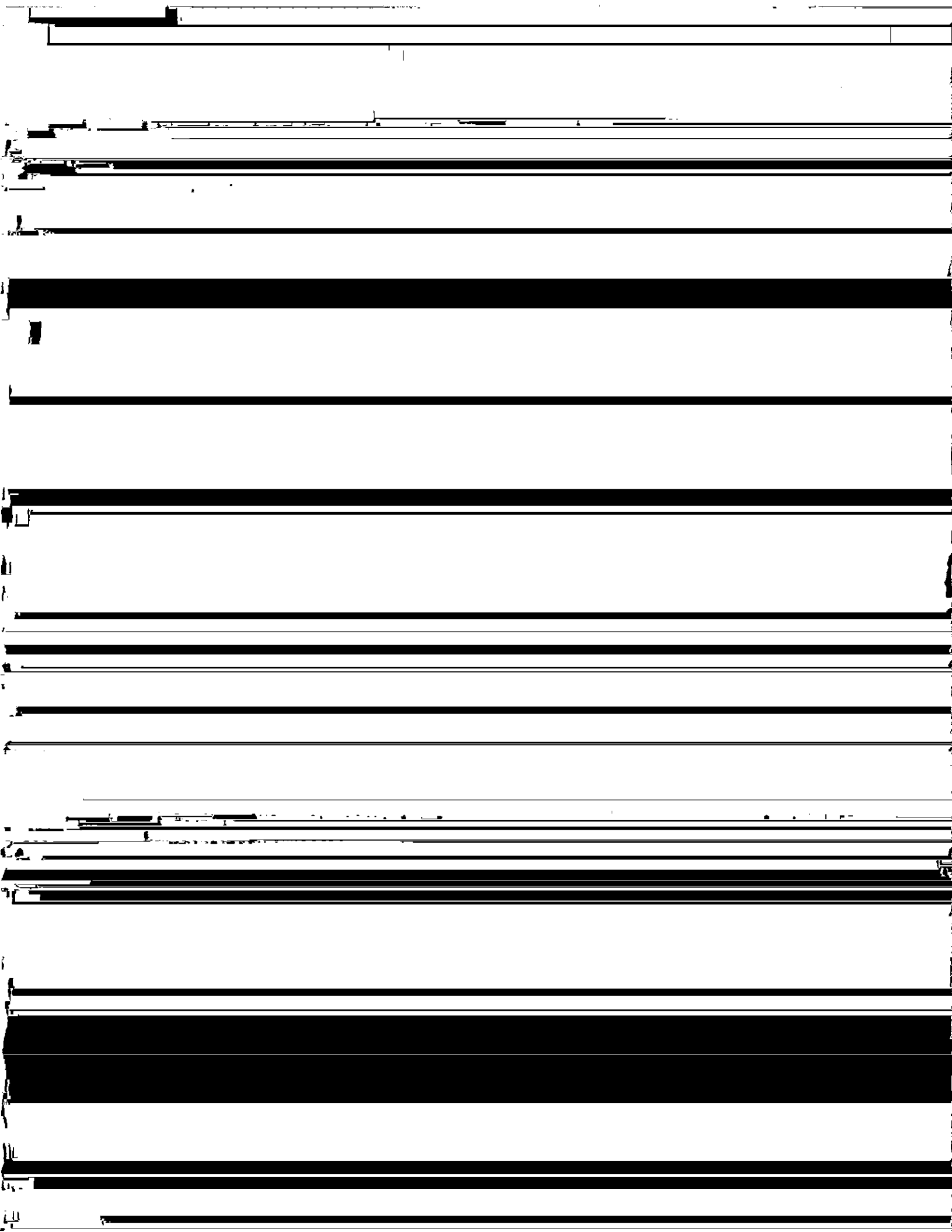
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might develop a technology that costs \$x more but reduces the pollution clean-up costs it would have to bear by \$5x. A firm that does not concern itself with such costs, however, has no reason to spend that additional \$x, and the public is saddled with the \$5x cost of clean-up. True, in the latter case the individ-



EMR to a regulatory ministry as soon as possible. At the same time, it should show us why this has not been the major regulatory problem in the period following the Ham Commission. Both provincial governments reoriented the accountability of structures of their regulatory agencies in this fashion immediately after release of Ham's report. Had it not been for the jurisdictional uncertainty which this paper has documented, these provincial regulators would have developed a superior regulatory system regardless of what became of the AECB's

federal government) should be removed from any role in the uranium mining sector. Furthermore, the AECB should be reformed with all speed, for it will

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17. Bruce Doern and Gordon Sims, 'Atomic Energy of Canada, Ltd.', in Bruce Doern, ed., Spending Tax Dollars: Federal Expenditures 1980-81 (School of

37. Ibid., p. 77.

62. Ibid., section 20 (a) (i), p. 7.

63. Ibid., section 2, p. 1.

64. Ibid., section 30, p. 10.

65. Ibid., sections 51-55, pp. 17-18.

66. Ibid., section 28, p. 9.

67. Ibid., section 50, p. 17.

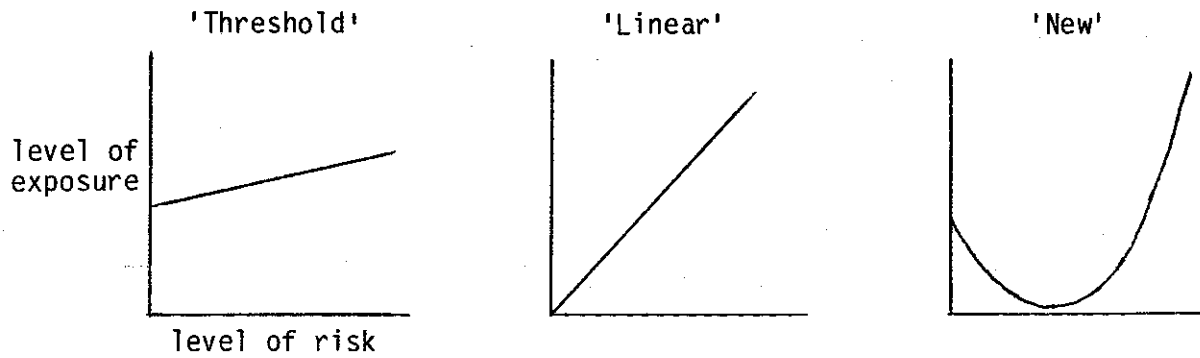
68. Ibid., section 63, p. 24.

82. For a detailed discussion and comparison of conventional OHS hazards in Ontario's mines, see Select Committee, Final Report, pp. 16-21.

83. CPMN, Proceedings, p. 87; and

Report of the Select Committee on Occupational Safety and Health





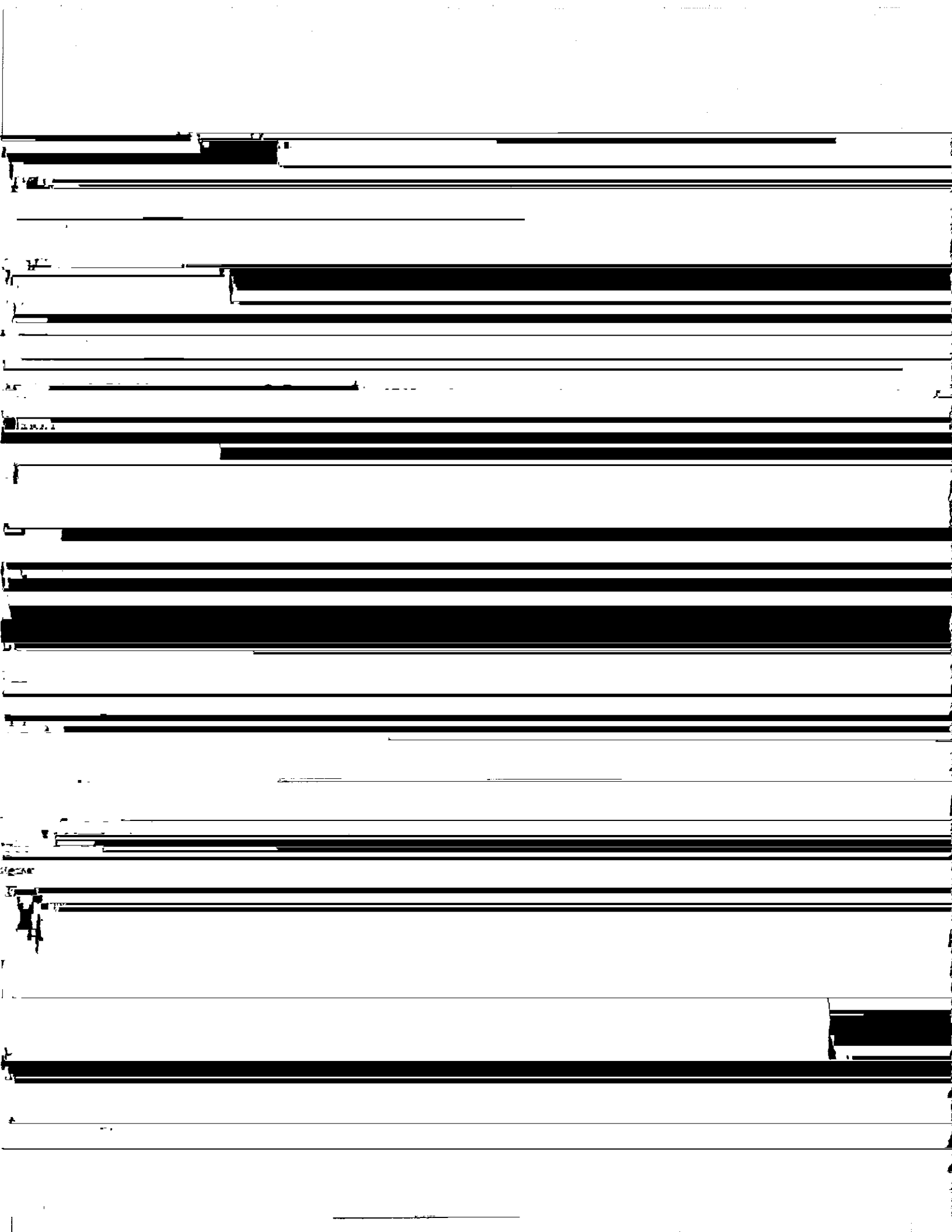
To date, the new hypothesis is not favoured by most scientists working in this area. Should it prove to be the correct one, however, its implications are serious and obvious. At present, all anyone who takes this issue seriously can do is urge further research and echo the Saskatchewan Ministry of Labour's position on ALARA and related matters.

87. Select Committee, Hearings (July 23, 1980), p. 27 (AECB); and G.W. Gibbs and P.Pintus, Health and Safety in the Canadian Mining Industry (Centre for Business Studies, Queen's University, August 1979)

101. Ibid, pp. 9-10. (letter from Ont. Minister of labour to federal Minister Labour)

102. Ibid., pp. 5-7; notes from meeting with AECB and Labour Canada officials,

118. Saskatchewan Labour, OHS Branch, 'Presentation Pertaining to the Health and Safety of Workers in the Mine of the Key Lake Mining Corporation' (July 1980) on p. 7 hereafter cited as Key Lake Presentation



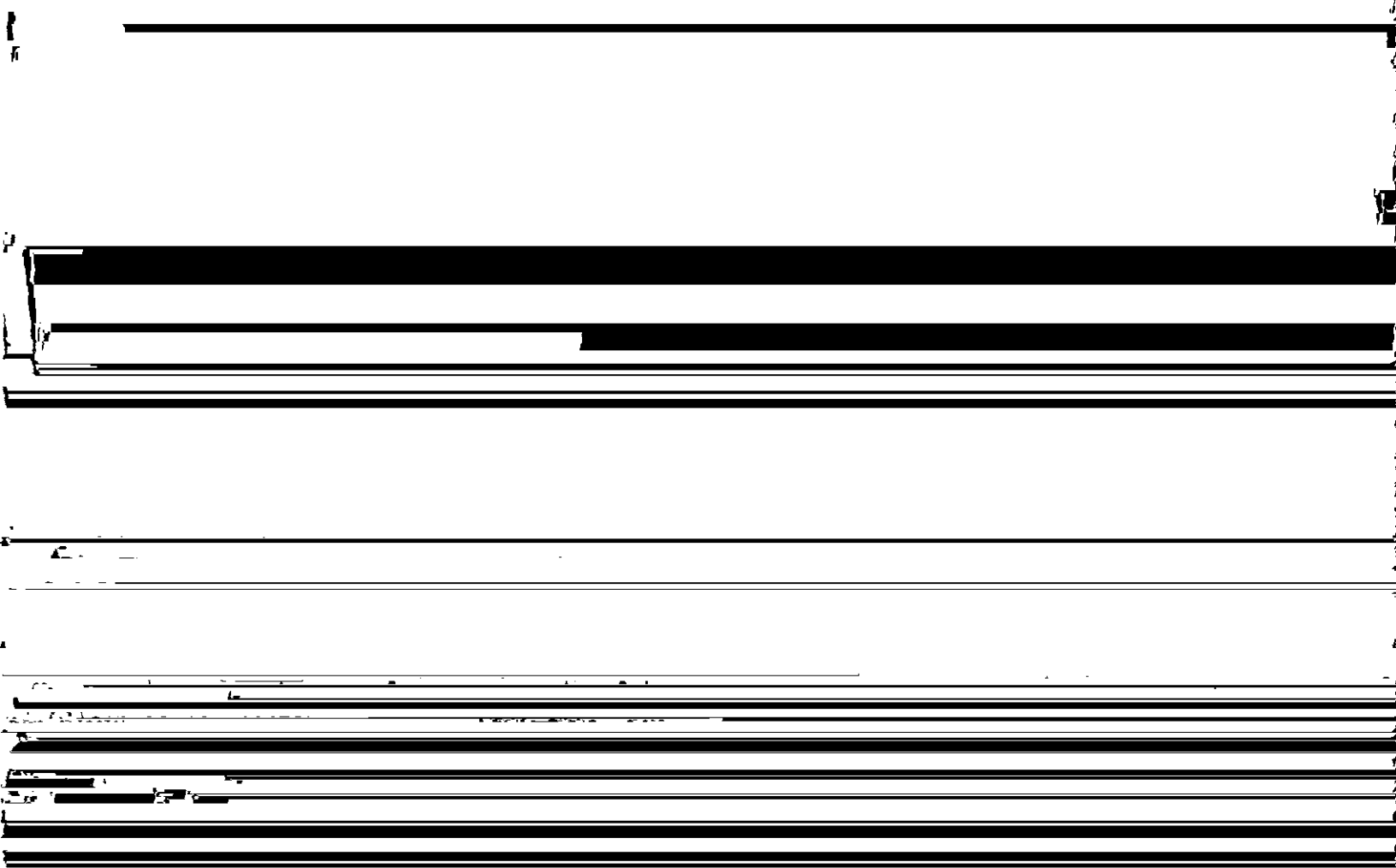
164. Select Committee, Hearings (July 29, 1980), pp. 16 (quote), and 18-19, Ontario Ministry of Environment.
165. Ibid., pp. 10-12.
166. Ibid., pp. 14-15.
167. Interviews with provincial environmental officials (July 1980).
168. Globe and Mail (April 16, 1980), p. 10.
169. The view that jurisdictions should be consolidated in lieu of a constitutional change, but that this is best done by excluding the federal line departments rather than the AECB from the OHS and FP fields is not

is a great deal more methodological work, gathering of information which does not yet exist, and the recognition that some kinds of risk will nonetheless be difficult to compare. This is precisely the sort of task for which the Canadian Centre for Occupational Health and Safety should be suited. To get some idea of the work which would be required, and how little has been done to date, see Science Council of Canada, Policies and Poisons: The Containment of Long-term Hazards to Human Health in the

Proceedings of the Conference on Occupational Health and Safety, Canada

THE AUTHOR

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