

1 **HEARING DAY 2**

2 **01-H18**

3 **COGEMA Resources Inc.:**

4 **Application for a licence to operate the**
5 **McClellan Lake Operation and to increase the**
6 **production limit**

7 We will now then move to item
8 number 3 of the agenda. This is Hearing Day 2 on
9 the matter of the application by COGEMA Resources
10 Inc. for a licence to operate the McClellan Lake
11 Operation and to increase the production limit.

12 We will note that Hearing Day 1
13 was held on June 28, 2001. COGEMA Resources
14 Inc.'s application is noted in CMD document 01-H18
15 and the public was invited to participate either
16 by oral presentation or written presentation on
17 Hearing Day 2 and I will note that the Members of
18 the Commission that were present for Day 1
19 included Mr. Graham, Dr. Giroux, Dr. Barnes,
20 Ms MacLachlan and myself.

21 We will note that the Notice of
22 Public Hearing was published on April 23, 2001 and
23 2001-H6 Amendment was published on May 31, 2001.

24 Presentations were made on Day 1
25 by both the applicant and by Commission staff, and

1 both the applicant and CNSC staff have presented
2 supplementary information.

3 That said, I would like to begin
4 then with the oral presentation by COGEMA
5 Resources Inc. as outlined in CMD document 01-
6 H18.1B and I will turn it over to Mr. Pollock for
7 your comments.

8 Mr. Pollock.

9

10 **01-H18.1B**

11 **Oral Presentation by COGEMA Resources Inc.**

12 MR. POLLOCK: Thank you.

13 Good morning, Madam Chairman and
14 Members of the Commission. I am Robert Pollock,
15 Vice President of Environment, Health and Safety
16 of COGEMA Resources Inc. Also present again today
17 on behalf of COGEMA Resources Inc. is Dr. John
18 Rowson, General Manager of McClean Lake Operation.

19 We are here to provide
20 supplementary information at this Day 2 public
21 hearing on our application for renewal of the CNSC
22 operating licence for McClean Lake Operation. Our
23 application also included a request for an
24 increased annual limit for production of uranium
25 concentrate.

1 We will provide information on two
2 topics. Firstly, we wish to provide further
3 information with respect to the licence term as
4 requested of us at the Day 1 public hearing.

5 Secondly, we wish to comment on
6 the submission by Mrs. Maisie Shiell, referenced
7 as CMD 01-H18.2.

8 We will also be pleased to answer
9 any further questions which members of the
10 Commission may wish to direct to us.

11 John Rowson will now speak to the
12 first point.

13 DR. ROWSON: Madam Chair, Members
14 of the Commission. We have requested a five-year
15 term in our previous written submission and
16 presentation. The rationale can be summarized as
17 follows.

18 One, we have outlined a mining and
19 milling plan extending to 2006. The mining plan
20 is based on completion of mining of the Sue "A",
21 Sue "B" and Sue "C" open pits by 2005 with
22 reclamation activities continuing through 2006.
23 Milling is expected to continue at an average
24 production rate of six million pounds of U₃O₈ per
25 year with an annual limit of eight million pounds

1 requested. Completion of the Sue open pits will
2 produce an ore inventory sufficient to feed the
3 mill for approximately five years.

4 Two, policies and programs for
5 protection of workers and the environment are in
6 place. These have been described in our previous
7 submissions, have been reviewed in detail by CNSC
8 staff against the requirements of the Nuclear
9 Safety and Control Act and its regulations and
10 found to be acceptable.

11 Three, satisfactory performance
12 has been demonstrated. We believe that a high
13 level of performance has been demonstrated in
14 protection of workers and the environment, in
15 terms of both the capabilities of the physical
16 facilities and in their operational management.

17 As noted in our closing summary at
18 the Day 1 public hearing, we expect this high
19 level of performance to continue, given the
20 organizational and quality management systems in
21 place.

22 Four, compliance measures are in
23 place. These include both the regular reporting
24 which we perform as specified in our licensing
25 documentation and inspections assessments and

1 audits which have been, and will continue to be,
2 carried out by CNSC staff.

3 On the basis of the factors
4 described on the previous slide, we believe that
5 the benefits which would result from an increased
6 licensing term can be realized without in any way
7 compromising protection of workers or the
8 environment.

9 The benefits of an increased
10 licensing term are summarized as follows.

11 One, it would allow our resources
12 to be increasingly focused on continuously
13 improving the operation rather than on licensing
14 related activities which represents no change from
15 the existing status.

16 It would reduce our direct costs
17 associated with travel and time for licensing
18 activities. Although these are not a large
19 proportion of total costs and are an expenditure
20 essential to our operation, all expenditures need
21 to be optimized.

22 Three, in our opinion, there would
23 also be benefits to CNSC staff in that efforts
24 could be increasingly focused on compliance
25 activities. As well, optimization of time and

1 travel costs important to regulatory agencies, not
2 just industry.

3 Lastly, but by no means least, we
4 seen an opportunity to enhance the effectiveness
5 of the operations of the Commission by avoiding a
6 licensing schedule where a licence amendment for
7 McClean Lake wold proceed shortly after a licence
8 renewal.

9 As noted on page 6 of our previous
10 submission of May 28, 2001, we have plans for
11 several future activities which will require
12 licence amendments.

13 In our opinion, it will be much
14 more effective to use consideration of a licence
15 amendment as an opportunity both to review
16 performance of the existing facility and to
17 consider the proposed changes. The alternative of
18 reviewing the performance of the existing McClean
19 Lake facility at a hearing for licence renewal,
20 followed relatively soon by a hearing for an
21 amendment, does not appear to be an effective
22 schedule.

23 In order to achieve these
24 benefits, the licensing term needs to be long
25 enough to make it likely that the next licensing

1 action will be triggered by an amendment, but not
2 so long as to be inappropriate in the event that
3 the amendment does not materialize as currently
4 expected.

5 We are aware of the CNSC staff
6 recommendations for a four-year term for the
7 McClellan Lake Operation operating licence. This is
8 one year less than we originally requested and we
9 believe that four years provide some margin in the
10 period over which operations at McClellan Lake will
11 be as described in this licence application. We
12 also expect to return for a licence amendment
13 within this period. We thus concur with the CNSC
14 staff recommendation for a four-year term.

15 Madam Chair, to provide comments
16 on the intervenor's submission by Mrs. Shiell our
17 presentation will continue with Bob Pollock.

18 MR. POLLOCK: Thanks, John.

19 As John has noted, we also wish to
20 comment on CMD 01-H18.2 which is the written
21 submission by Mrs. Maisie Shiell on our licence
22 application. It focuses on the proposed increase
23 in production from six to eight million pounds
24 U₃O₈ per year.

25 As a starting point, let me make

1 it clear that we agree fully that it is necessary
2 to protect the environment not only for our
3 generation, but also for future generations.
4 We believe that our McClean Lake Operation does
5 exactly that, while providing many benefits to
6 northern residents and more broadly to the
7 province and country.

8 That is why we take Mrs. Shiell's
9 concerns very seriously. We are writing to her
10 directly since it appears that she has not taken
11 into consideration key points in the analyses
12 contained in our environmental assessment of the
13 proposed production increase which was prepared to
14 assist CNSC staff in developing their
15 environmental screening report.

16 We wish also to reiterate our
17 belief that the existing McClean Lake Operation
18 has undergone a complete and rigorous process of
19 environmental assessment, approval by governments
20 and licensing by regulatory agencies. We thus
21 agree that the focus now should be on the proposed
22 change.

23 These key points are summarized on
24 this slide.

25 As noted on page 43 of our

1 previous written submission, that's CMD 01-H18.1,
2 we have used operational data to look for trends
3 in various parameters, including the JEB water
4 treatment plant performance parameters with
5 uranium production. Over the period when data
6 were available for the analysis, the monthly mill
7 production when converted to an equivalent annual
8 rate, varied from a rate corresponding to just
9 under six million pounds U_3O_8 to just over eight
10 million pounds U_3O_8 per year.

11 Given that the monthly production
12 rates ranged over the full range of interest,
13 statistical analyses were performed to determine
14 whether key performance parameters varied with
15 monthly production. For the JEB water treatment
16 plant, the parameters were the pH and
17 concentration in the effluent of total suspended
18 solids and seven key radionuclides and metals,
19 including radium-226 and uranium and also the
20 total monthly contaminant loadings for the four
21 key potential contaminants of arsenic, nickel,
22 radium-226 and uranium.

23 The results showed firstly month-
24 to-month variations, but no statistically
25 significant trend for any parameter with monthly

1 uranium production. This is to be expected due to
2 the variability inherent to the water treatment
3 process and in the incoming feed flow to the
4 plant.

5 Substantial margins between
6 demonstrated performance and required performance,
7 with the latter defined by predictions made in
8 previous environmental assessments and, where
9 appropriate, by regulatory limits.

10 This information was contained in
11 the detailed project description which we have
12 previously provided to Mrs. Shiell and the Ra-226
13 data was discussed with her at the public meeting
14 in Saskatoon. We believe this information alone
15 provides a substantive response to her concerns
16 about the mill production increase.

17 In our letter we are indicating
18 our availability for further direct clarification
19 of the data and of our analyses, if she so wishes,
20 because we do not believe this information has
21 been adequately taken into consideration.

22 Point number two, previous
23 assessments of the existing facilities. The
24 facilities and activities proposed for McClean
25 Lake were extensively considered, including public

1 hearings, by the Joint Federal-Provincial Panel on
2 Uranium Mining Developments in Northern
3 Saskatchewan between 1991 and 1997. Panel
4 recommendations resulting from these environmental
5 assessments were reflected in the conditions
6 contained in the federal and provincial decisions
7 approving the McClean Lake project to proceed.

8 These recommendations and the
9 government decisions have been further considered
10 within the detailed licensing process followed
11 previously by the Atomic Energy Control Board and
12 now by the CNSC.

13 We believe these previous
14 assessments provide a comprehensive and sound
15 basis for the approval and licensing of the
16 existing facilities. In our opinion the only
17 relevant environmental assessment issue arising
18 from Mrs. Shiell's submission is consideration of
19 the proposed production increase. We believe that
20 the conclusions of the environmental screening
21 performed by CNSC staff for this proposed change
22 are warranted. As indicated point one previously,
23 we are available to further clarify our data and
24 analyses should she so wish.

25 In summary, we appreciate

1 Mrs. Shiell's concern for the environment and
2 believe that a closer examination of the data and
3 analyses for McClean Lake support the conclusion
4 that the proposed increase in mill production is
5 not likely too cause significant adverse
6 environmental effects, taking into account the
7 mitigating measures which have already
8 demonstrated their effectiveness. We are in the
9 process of responding directly to Mrs. Shiell and
10 would welcome further direct communication if she
11 so wishes.

12 This concludes our supplementary
13 information. We will be pleased to answer any
14 questions which Commission members may wish to
15 direct to us.

16 Thank you.

17 THE CHAIRPERSON: Thank you,
18 Mr. Pollock.

19 With the permission of the
20 Commission Members, I would like to call for the
21 presentation by staff on this project before we
22 open the floor for questions.

23 On that basis, I would call for
24 the oral presentation by CNSC staff as outlined in
25 Commission Member Documents CMD 01-H18.A1 and

1 01-H18.B.

2 I would call upon Mr. Pereira,
3 please.

4

5 **01-H18.A1/01-H18.B**

6 **Oral Presentation by CNSC Staff**

7 MR. PEREIRA: Good morning, Madam
8 Chair and Members of the Commission. My name is
9 Ken Pereira. I am the Director General of the
10 Directorate of Fuel Cycle and Materials
11 Regulation.

12 At the Commission hearing held in
13 June, CNSC staff recommended the issuance of a
14 licence to Consumer Resources Inc. for continued
15 operation of their McClean Lake facility.

16 A licence with a two year duration
17 was recommended at the time in accordance with the
18 practice for licences issued to major facilities.

19 In response to the discussion
20 during the hearing on the license term issue, CNSC
21 staff has submitted to the Commission, in
22 CMD 01-H18.B, a review of the basis for
23 consideration of a longer term licence for the
24 McClean Lake operation.

25 Factors that support the new

1 recommendation of a licence with a four-year term
2 are:

3 the stability of the activities
4 anticipated at the McClean Lake operation over the
5 proposed license term;

6 the status of the licensee's
7 managed programs at the facility;

8 the licensee's performance as
9 assessed by CNSC staff over the term of the
10 current licence; and

11 requirements in the licence for
12 regular reporting to CNSC staff on activities
13 aimed at prevention of undue risk to health,
14 safety and the environment.

15 Besides the CNSC staff assessment
16 and recommendation, the Commission also has before
17 it a screening report prepared pursuant to the
18 requirements of the Canadian Environmental
19 Assessment Act.

20 It should be noted that the
21 Canadian Environmental Assessment Act requires
22 that the Commission render a decision regarding
23 the conclusions of the screening report prior to
24 deciding on the renewal of the license.

25 CNSC staff would be pleased to

1 answer any questions the Commission may have
2 regarding our recommendation for renewal of the
3 licence for the McClean Lake operation.

4 THE CHAIRPERSON: Thank you very
5 much, Mr. Pereira.

6 With that, I would like to open
7 the floor to questions from the Commission
8 Members.

9 Dr. Barnes.

10 MEMBER BARNES: I have a point of
11 order.

12 Since the applicant has brought
13 into the discussion Mrs. Shiell's letter, would it
14 be appropriate to introduce Mrs. Shiell's document
15 before going on, since she is not here I presume?

16 THE CHAIRPERSON: Is that the wish
17 of the Commission?

18 Okay. The Chair agrees with
19 Dr. Barnes, then, and we will bring into the
20 hearing record the written submission from
21 Mrs. Shiell's as noted in CMD Document 01-H18.2.

22

23 **01-H18.2**

24 **Written submission from Mrs. Maisie Shiell**

25 --- The following is taken as read into the record

1 "To: President Linda Keen
2 and Commission members,
3 Canadian Nuclear Safety
4 Commission, Ottawa
5 From: Maisie Shiell, #11-125
6 Avenue O South, Saskatoon,
7 Sk. S7M 2R4
8 Re: CMD 01-H18 - The
9 Licensing of Renewal and
10 Increased Production at
11 McClean Lake Mine
12 1. The Licensing of the
13 Proposed Increase of U308
14 Production
15 In the CMD 01-H18, the
16 CNSC staff has advised the
17 Canadian Nuclear Safety
18 Commissioners to grant a
19 renewal of the Licence to
20 COGEMA to process six million
21 pounds U308 annually at the
22 JEB mill. The staff have
23 also recommended that the NSC
24 Commission grant COGEMA a
25 Licence to increase

1 production by two million
2 pounds per year, i.e an
3 increase of 33%.

4 Section 20(1) of the
5 Canadian Environment
6 Assessment Act (CEAA) must be
7 applied before an increase of
8 production can be licensed.
9 In the CMD 01-H18, the staff
10 are advocating that this
11 should be accomplished by
12 applying subSection 20(1)(a).

13 Section 20(1) requires
14 that the responsible
15 authority shall follow one of
16 three options: (a); (b); or
17 (c), taking into account the
18 screening report as well as
19 any public concerns. The
20 subSection 20(1)(a) option
21 allows the responsible
22 authority to exercise his/her
23 power of authority to licence
24 the project, if he/she,
25 taking into account public

1 concern, considers that 'the
2 project is not likely to
3 cause significant adverse
4 environmental effects' and
5 taking into account any
6 mitigating measures.
7 Further, the responsible
8 authority is required to
9 ensure that any mitigating
10 measures are implemented

11 How much evidence is the
12 staff required to have in
13 order to advise that 'the
14 project is not likely to
15 cause significant adverse
16 environmental effect?

17 I suggest that, in the
18 case of milling high-grades
19 of uranium, at this time,
20 there is hardly enough
21 evidence to suggest that
22 increasing annually 33%
23 production 'is not likely to
24 cause significant adverse
25 environmental effects'.

1 There is acknowledged
2 uncertainty in the scientific
3 community regarding the
4 effects of alpha-irradiation
5 on the aquatic biota
6 [December draft of the PSL-2,
7 Section 3.4.1.(89), as well
8 as comments to the July Draft
9 of that document and
10 industry's WG3 and WG4
11 reports] Because Radium-226
12 and Thorium-230 are in the
13 mill effluent, it is
14 necessary to consider the
15 long half-lives of these
16 radionuclides, as well as the
17 fact that alpha is a high-LET
18 radiation.

19 If it is uncertain
20 whether or not the project is
21 likely to cause `significant
22 adverse environmental
23 effects', taking into account
24 the mitigating measures, the
25 responsible authority is

1 required to follow the
2 subSection 20(1)(c)(i) option
3 and `refer the project to the
4 Minister for referral to a
5 mediator or review panel'

6 In the case of the COGEMA
7 application to increase the
8 annual production of
9 high-grade uranium by 33%, I
10 suggest that it would be more
11 appropriate to acknowledge
12 that it is uncertain whether
13 or not there is likely to be
14 adverse environmental effects
15 from the long-lived,
16 high-LET, alpha-emitting
17 Th-230 and Ra-226 and their
18 alpha-emitting progeny
19 accumulating in the
20 sediments. Thus, subSection
21 20(1)(c)(i) would be in
22 order.

23 The only evidence that
24 exists to support the
25 contention that adding two

1 million pounds annually to
2 the mill 'is not likely to
3 cause significant adverse
4 environmental effects' is
5 what can be observed in
6 changes in taxa and biomass
7 to plant life. IAEA
8 TECDOC 1091, 1999,
9 Section 4.3 says that
10 'biological surveillance can
11 reveal trends or differences.
12 However, the occurrence of
13 observed trends or
14 differences can be difficult
15 or impossible to interpret
16 since they may occur
17 naturally for unknown reasons
18 or in response to
19 non-radiological stresses.
20 Therefore, reliance solely on
21 biological surveillance is
22 not recommended.'
23 (IAEA 1999)

24 Present dose and dose
25 rate effects 'limits' [ENEV

1 (Estimated No Effect Value)
2 LEL (Lowest Effect Level)
3 NOEL (No Observed Effect
4 Level) etc] are based on
5 scientific studies on
6 organisms impacted by low-LET
7 radiation and/or on
8 observation. Although there
9 have been a few laboratory
10 experiments with
11 alpha-irradiation for genetic
12 or somatic effect, there does
13 not appear to have been any
14 experiments for genetic or
15 somatic effects from
16 Radium-226 irradiation. In
17 Dr. Patsie Thompson's
18 submission to the Joint Panel
19 (May 30, 1996), she attached
20 a list of a number of
21 experiments that have been
22 conducted on organisms
23 inhabiting lakes contaminated
24 with beta-emitting and
25 gamma-emitting radionuclides.

1 But there does not appear to
2 be any such experiments
3 conducted on organisms
4 inhabiting alpha-irradiated
5 lakes such as Beaverlodge
6 Lake. It is possible that
7 the genetic and somatic
8 effects are occurring, but
9 they are not being detected.

10 2. Environmental Impacts

11 Section 16(1)(a) and (b)
12 (CEAA) requires that the
13 environmental effects and the
14 cumulative effects be
15 screened. And their
16 significance examined.
17 However, in the Screening
18 Report, there is no mention
19 of the environmental effects
20 from the extra
21 alpha-irradiation in the
22 biota due to the extra
23 production of U308 annually.

24 In COGEMA's `Project
25 Description of Increased Mill

1 Production Rate' (Appendix 1,
2 Section 4.3.2), I quote:
3 "Discharges of treated
4 water from the JEB WTP
5 and Sue WTP, through the
6 Sink/Vulture Treated
7 Effluent System to the
8 East Basin of McClean
9 Lake and then on to
10 Collins Creek, represent
11 the main operation impact
12 of McClean Lake operation
13 on the environment"
14 (emphasis added)
15 I agree with the above
16 quoted assessment. And,
17 because of this, I am
18 concerned that the living
19 environment in the sediment
20 -- i.e. invertebrates in Sink
21 Lake, Vulture Lake, McClean
22 Lake and, to a lesser extent,
23 Collins Creek are becoming
24 irradiated with long-lived
25 Radium-226 and its

1 shorter-lived progeny. But
2 apparently, in the 'mixing
3 zone' (Sink, Vulture and
4 McClean Lakes), this impact
5 has been discounted. Such a
6 'mixing Zone' is not
7 described in CEAA. By what
8 authority is one allowed to
9 irradiate organisms in the
10 'mixing Zone'?

11 3. Increased U308 Production

12 Increased production of
13 U308 annually would mean also
14 the annual increase of
15 Lead-210 and Polonium-210
16 accumulating in the sediments
17 and in the biota.

18 The cumulative effects
19 over the project's lifetime
20 are considered in the COGEMA
21 statement Appendix 1
22 Section 4.2.4. COGEMA
23 suggests that there 'could'
24 be 'no change' to the
25 environmental effects in the

1 long-term life of the
2 operation. The reason given
3 is that `the cumulative
4 effects over the project's
5 long-term lifetime is
6 determined by the total
7 amount of ore processed.

8 I agree that this could
9 probably be true for the
10 non-radioactive chemical
11 contaminants (and, to a
12 certain extent, for Uranium
13 with its very low
14 radioactivity) However, I
15 believe it will not be true
16 for Radium-226, which is
17 radioactively decaying into
18 shorter-lived radionuclides.

19 Lead-210 and Polonium-210
20 will be accumulating in the
21 sediments. Therefore, when
22 milling 8 million pounds per
23 year, there would have
24 accumulated in the sediments,
25 and in the biota living in

1 these sediments, one sixth
2 more Polonium-210 and
3 Lead-210 (which will be
4 producing more Polonium-210)
5 than when milling 6 million
6 pounds per year. Table A4 in
7 the COGEMA statement
8 (appendix 1, subAppendix A),
9 the monthly loadings, in Mega
10 Becquerels, are given for
11 each month, the November and
12 December loadings were both
13 4,000 MBq/month although
14 there was no milling in
15 November and December. If
16 COGEMA had been milling the
17 8 million pounds U308 per
18 year, these loadings would
19 probably have been 8 or
20 9,000 MBq/month. (October
21 loadings were 7,000 and
22 January loadings were 10,000
23 MBq/month). This would have
24 added 16 or 17,000 Mbq
25 Radium-226 to the loadings

1 during the year. Therefore,
2 there would have been an
3 extra Pb-210 and Po-210
4 accumulation in the sediment.
5 I am concerned that the
6 Polonium will, potentially,
7 be creating much of the
8 genetic and somatic changes
9 in the biota.

10 Although at the end of
11 mining, there will be less
12 Po-210 and Pb-210 produced
13 because of the time saved, I
14 am concerned that during the
15 mining these impacts will be
16 happening and spreading. My
17 concern really relates to
18 the fact that these impacts
19 are being allowed to happen
20 at all.

21 4. Long Term Effects

22 Appendix 1
23 (Section 4.2.2) of the COGEMA
24 Statement deals with the
25 potential long-term

1 environmental effects from
2 arsenic. However, COGEMA
3 does not mention the
4 potential long-term effects
5 for the long-lived,
6 alpha-emitting radionuclides
7 Thorium-230 and Radium-226.

8 Because Radium-226 will
9 be decaying for thousands of
10 years (1600 year half-life),
11 and because it's progeny is
12 accumulating in the sediments
13 and in the biota, from which
14 the Radium-226 is likely to
15 be recycled back into plant
16 life from the detritus,
17 should we not also be
18 considering the radionuclides
19 for their potential long-term
20 effects?

21 5. Mitigating Measures

22 The JEB and Sue Water
23 Treatment Plants mitigate the
24 release of the larger
25 quantities of Radium-226,

1 coming out of the mill, to
2 the environment. The release
3 of Radium-226 from these
4 water treatment plants is
5 allowed to be as high as
6 1 Bq/litre in a grab sample,
7 but is limited to
8 0.37 Bq/litre for the monthly
9 mean. As COGEMA rightly said
10 (Appendix 1 Section 4.3.2),
11 these relatively high
12 releases 'represent the main
13 operational impact of McClean
14 Lake operations on the
15 environment'. These releases
16 flow into Sink Lake, Vulture
17 Lake, McClean Lake and
18 Collins Creek.

19 There is no data to
20 indicate how much of this
21 Radium-226 has gone into the
22 sediments during the year-
23 and- eight months the JEB
24 mill has been operating. The
25 sediments and biota were last

1 tested at McClean Lake in
2 1998 and early 1999'
3 (CMD 01-H18). This would
4 have been prior to mill
5 start-up.

6 6. Potential Effects caused
7 by Alpha-emitting
8 Uranium-derived Radionuclides
9 Thorium-230 and
10 Radium-226, which are both
11 alpha-emitting radionuclides
12 (as has been said) have very
13 long half-lives:
14 80,000 years and 1600 years
15 respectively. Radium-226
16 decays into a number of
17 shorter-lived alpha-emitters.
18 Pb-210, a beta-emitter in
19 this Radium-226 decay chain,
20 has a 22 year half-life and
21 decays into alpha-emitting
22 Polonium-210. Thus, any of
23 these alpha-emitting
24 radionuclides that get into
25 plant, animal, soil, sediment

1 or water can potentially
2 cause adverse genetic or
3 somatic effects at very low
4 doses and dose rates
5 (Gofman, 1980; Aspect
6 Consultants, 1980).
7 Furthermore, damage caused by
8 alpha radiation is not likely
9 to be repaired (NCRP-104;
10 Roots et al, 1990)

11 As I have already
12 indicated, the calculation by
13 which the dose and dose rate
14 objectives and guidelines for
15 alpha-irradiation is
16 presently being estimated is
17 by extrapolation from the
18 effects, scientifically found
19 in aquatic biota inhabiting
20 gamma- and beta-irradiated
21 lakes (Thompson, 1996; PSL-2
22 Supporting Document). And
23 then modified by an RBE.
24 CNSC uses a value of 40.
25 Whether COGEMA uses an RBE,

1 (or what RBE value) I do not
2 know. But, I repeat: there
3 are no agreed upon,
4 scientifically-derived test
5 results for the genetic or
6 somatic effects of organisms
7 inhabiting Radium-226- and-
8 its- progeny irradiated
9 lakes.

10 Alpha is a high-LET
11 radiation. An alpha particle
12 only travels about 40 micron,
13 but it causes extremely dense
14 ionization. If an alpha
15 particle gets into the
16 bloodstream, it can get taken
17 to such organs as ovaries,
18 testes, liver or kidney. Or
19 it can get into the bone
20 marrow. And, as I have said
21 above: 'damage caused by
22 alpha-irradiation is not
23 likely to be repaired'.
24 Further, 'there is evidence
25 that damage caused by alpha

1 radiation is fundamentally
2 different from that of
3 low-LET radiation [PSL- 2
4 December 2000,
5 Section 3.4.1.(89) credited
6 to Goodhead et al 1993]

7 Treated mill effluents,
8 carrying relatively small
9 quantities of Radium-226 flow
10 through a series of lakes and
11 streams to Wollaston Lake.
12 Some of the radium-derived
13 alpha-emitters get into the
14 sediments in which living
15 creatures dwell. And these
16 animals and plants form the
17 base of the food chain. How
18 confident can we be that
19 genetic and somatic damage
20 done to the benthic
21 invertebrates in Sink Lake,
22 Vulture Lake and McClean Lake
23 will not adversely affect the
24 food chain in the long-term?
25 The CMD 01 H18 only accounts

1 for the Radium-226 in the
2 water at the outlet at the
3 McClean Lake East Bay. I am
4 sceptical regarding the fact
5 that the ten to fifteen
6 kilometres of the 'mixing
7 zone' has been discounted. I
8 cannot have confidence that
9 there will be no long-term
10 significant adverse
11 environmental effects, if we
12 rely on the traditional
13 standards, such as the SSWQO
14 in the water several
15 kilometres from the mill;
16 Or, that 'cumulative mass
17 loading is well within the
18 licensee's action level,' as
19 the CMD tells us.

20 By excluding these
21 alpha-emitting radionuclides
22 in the sediments in Sink
23 Lake, Vulture Lake and
24 McClean Lakes -- because they
25 are considered to be in the

1 `mixing zone' -- we will be
2 excluding their potential
3 long-term, genetic and
4 somatic effects. Would it
5 not be more appropriate to be
6 aware, and listening to what
7 is being said by scientists,
8 such as D.T. Goodhead in a
9 1993 paper cited in
10 Section 3.4.1.(89) in the
11 December 2000 PSL-2 Draft
12 Assessment, in which it is
13 said (I repeat here) `There
14 is evidence that damage
15 caused by alpha radiation is
16 fundamentally different than
17 that of low-LET radiation'.

18 The December PSL-2 Draft
19 Assessment cited twenty eight
20 experiments which had been
21 searching for an appropriate
22 value for an RBE (relative
23 biological effectiveness) of
24 alpha radiation, in order to
25 describe `toxic' in the

1 Canadian Environmental
2 Protection Act for
3 radionuclides. The small
4 number of these experiments
5 that used the in vivo method
6 found relatively high RBEs.
7 According to the December
8 PSL-2 Draft,
9 Section 3.4.1.(89), these
10 in vivo studies were
11 conducted at 'relatively low
12 doses and dose rates and are
13 much closer to natural
14 exposure conditions than
15 in vitro studies that used
16 very high doses and dose
17 rates'. The experiments that
18 showed 'much higher
19 (>100 RBE values) ... were
20 obtained using endpoints
21 (reproduction and immune
22 system function) that are
23 important for the maintenance
24 of healthy, actively
25 reproducing populations'

1 (Emphasis added)
2 A highly regarded
3 scientist from England, Jan
4 Penreath, in her review of
5 the July PSL-2 draft
6 assessment, regarding the RBE
7 value of 40, which the
8 authors had used, said (in
9 part) `There is still no
10 "right" answer ... I think we
11 need a quantity and unit to
12 describe, more truthfully,
13 the likely effects of
14 radiation on fauna and flora
15 ... I am therefore not sure
16 that an ecodosimetry
17 weighting factor is a
18 particularly useful concept,
19 it is too restrictive.'
20 Penreath continued by
21 suggesting that a number of
22 scientists are inventing
23 their own terminology which,
24 she says, may be a good thing
25 because it may `draw

1 attention to the need for us
2 all to get our act together
3 on this issue.'

4 In spite of this
5 unresolved question regarding
6 the effects of
7 alpha-radiation, the CNSC
8 staff are recommending that
9 CEEA Section 20(1)(a) be
10 followed -- that it is
11 unlikely that the project
12 will cause significant
13 adverse environmental
14 effects. I do not believe
15 that we have sufficient
16 evidence to say this.

17 7. Conclusion

18 In my opinion, it may not
19 be true to say that allowing
20 an annual 33% increased U308
21 production at the JEB mill
22 'is not likely to cause
23 significant adverse
24 environmental effects.' I
25 believe it would be closer to

1 the truth to follow CEAA
2 subSection 20(1)(c)(i) which
3 says: `if it is uncertain
4 ... whether the project ...
5 is likely to cause ...
6 significant adverse
7 environmental effects', the
8 responsible authority should
9 refer the project to the
10 Minister for referral to a
11 mediator or panel review.
12 Under such circumstances, it
13 would be possible to discuss
14 such problems as I have
15 raised above.

16 If such long-term effects
17 from the long-lived
18 Thorium-230 and Radium-226 or
19 from their progeny do occur,
20 this may cause serious
21 long-term environmental
22 problems for future
23 generations in the years and
24 centuries to come.

25 Canada endorses the

1 concept of 'Sustainable
2 Development' in the Preamble
3 to the Canadian Environmental
4 Assessment Act, saying (in
5 part): 'WHEREAS the
6 Government of Canada seeks to
7 achieve sustainable
8 development by conserving and
9 enhancing environmental
10 quality and by encouraging
11 and promoting economic
12 development that conserves
13 and enhances environmental
14 quality;'

15 Sustainable development,
16 as defined in Our Common
17 Future, authored by the World
18 Commission on Environment and
19 Development (1987): 'to
20 ensure that it (the proposed
21 development) meets the needs
22 of the present without
23 compromising the ability of
24 future generations to meet
25 their own needs.

1 The authors continue:
2 `The concept of sustainable
3 development does imply
4 limits -- not absolute
5 limits -- but limitations
6 imposed by the present state
7 of technology'. Is it a lack
8 of the present state of
9 technology that no evidence
10 exists regarding the genetic
11 and somatic effects of
12 alpha-emitting,
13 Uranium-derived
14 radionuclides? Or, is this
15 caused by a lack of political
16 will to have the necessary
17 studies done? In
18 conversation with a radiation
19 technologist recently, he
20 agreed with me that if such
21 studies have been done with
22 organisms contaminated with
23 beta- and gamma-irradiation,
24 he felt it should be
25 technically possible to do

1 such studies on organisms
2 inhabiting alpha-irradiated
3 lakes.

4 For its own integrity,
5 Canada needs to scrupulously
6 follow its environmental
7 laws. If it is technically
8 possible, it is important
9 that Canada makes sure that
10 studies on the genetic and
11 somatic effects of organisms
12 living in Uranium-derived,
13 alpha-emitting irradiated
14 lakes be done before allowing
15 further high-grade mining or
16 milling to expand.

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20 2001 in Ottawa

21 THE CHAIRPERSON: Therefore, I
22 will open the floor to question on the licensee's
23 presentation, the submission by the Commission
24 Staff and also Mrs. Shiell's.

25 On that basis, Dr. Barnes, would

1 you like to start the questioning?

2 MEMBER BARNES: I would just like
3 to take up a point made by Mrs. Shiell. just to
4 get COGEMA's view whether this is correct or not,
5 and that is her short paragraph at the end of
6 page 5. I will read it for the record.

7 "There is no data to indicate
8 how much of this Radium-26
9 has gone into the sediments
10 during the year- and- eight
11 months the JEB mill has been
12 operating. The sediments and
13 biota were last tested at
14 McClellan Lake `in 1998 and
15 early 1999' (CMD 01-H18).
16 This would have been prior to
17 mill start-up."

18 MR. POLLOCK: There certainly is a
19 record of the total amount of Radium-226 release
20 from the facility into the aquatic environment. I
21 mean, that is clearly measured at the point of
22 release. So one knows the total amount and it is
23 well within the amounts which were previously
24 estimated and considered in the environmental
25 assessment.

1 One at the moment would need to
2 make a paper estimate of how much of that radium
3 had partitioned to the sediments in the
4 immediately downstream area as opposed to how much
5 stayed in solution in the water column. Those
6 estimates were in fact made in the environmental
7 assessment.

8 So what we can say is that we know
9 that the total amounts released are well within
10 those that were previously considered and
11 certainly there are estimates of what the
12 partitioning would be.

13 In terms of when the next major
14 sampling program would be, the next scheduled
15 monitoring for sediment and benthic invertebrates
16 in the system, then there is a series of lakes
17 that go downstream from the immediate point of
18 release.

19 The next series of measurements of
20 these is scheduled for next summer. We are
21 required to periodically produce a state of the
22 environment report on a cycle of every so many
23 years and the next one of these is due in May of
24 2003, which would be three years.

25 We think this is entirely

1 appropriate that this provides, in effect, an
2 update of the baseline. One may start to see
3 changes that are measurable in the closest lakes
4 but they will not have propagated further
5 downstream over the first few years. So to the
6 extent that there is measured increases, one will
7 see them start to develop and can then trace them
8 in future years, over the next -- we estimate this
9 will ultimately be a 40-year project.

10 THE CHAIRPERSON: Further
11 questions, Dr. Barnes?

12 MEMBER BARNES: Again to COGEMA, I
13 would just like to take up a couple of questions
14 on your page 3 where you list four of the benefits
15 for an increased license term, summarize,
16 et cetera.

17 Your second one said it would
18 reduce your direct costs associated with travel
19 and licensing activities.

20 "Although these are not a
21 large proportion, total costs
22 are an expenditure that would
23 need to be optimized."

24 Could you just tell us roughly --
25 if there was a percent perhaps it would be the

1 most meaningful way -- what percent they actually
2 do represent of your direct costs over a two-year
3 cycle at the present time?

4 MR. POLLOCK: I would need to take
5 out a pencil and paper and work out an actual
6 fraction. It is clearly quite a small fraction of
7 the overall costs.

8 I know that we spend in the order
9 of perhaps \$2 million to \$2.5 million per site
10 overall on environment, health and safety support,
11 but much of that is in direct support of the
12 operation. So it is hard to break out how much of
13 that is specifically licensing.

14 Certainly, you know, there are two
15 trips down here for two of us for two hearings,
16 plus several person months of both staff time and
17 also fairly senior management time have gone into
18 the preparation of these documents which you have
19 had presented to you over the last few months. So
20 it is not a large proportion.

21 We do operate, though, in a
22 competitive environment and we believe all our
23 costs should be optimized.

24 MEMBER BARNES: I guess I was just
25 getting at the first two points there which you --

1 the first one was:

2 "To allow our resources to
3 increasingly focus on
4 continuously improving the
5 operation..." (As read)

6 I would have thought that was what
7 you would be doing anyway:

8 "...rather than on
9 licensing-related activities
10 which represent no change
11 from the existing status."
12 (As read)

13 It seems to me that COGEMA, like
14 other companies, live and work within a regulatory
15 framework and I think the public -- this is an
16 issue which is of concern to the public overall,
17 but -- to see that the operations are being
18 conducted in an environmentally safe way.

19 So I really wasn't persuaded by
20 the first two points.

21 MR. POLLOCK: I guess I would just
22 offer the further observation that on a two-year
23 licensing cycle, from the time that we submit our
24 application for renewal, which in this case was
25 around the end of last year, or before the end of

1 last year, until we have completed the Day 2
2 public hearing, that at variant over that period
3 of nine months. So, in effect, the relicensing
4 period takes about nine months out of the 24-month
5 cycle.

6 So I can't say that we spend that
7 whole nine months continuously on this activity,
8 that is clearly not the case, but from time to
9 time we spend significant periods of time and nine
10 months out of 24 is a significant proportion of
11 the total licensing period which -- I mean, if I
12 looked at a two-year licence, within 12 months we
13 would need to be starting to formulate our
14 assessment and presentation, submissions for
15 renewal.

16 So again, it is not -- I have no
17 dispute and certainly agree, I believe we spend
18 whatever time is necessary and sufficient to do a
19 good job of oversight and licensing-related
20 activities, but they are not insignificant in
21 terms of the amount of time they take.

22 THE CHAIRPERSON: Mr. Graham.

23 MEMBER GRAHAM: Thank you.

24 My question is to CNSC staff and
25 it refers to Ms Shiell's submission on page 4. It

1 is in the second paragraph where she states:

2 "In Dr. Patsie Thompson's
3 submission to the Joint Panel
4 (May 30, 1996), she attached
5 a list of a number of
6 experiments that have been
7 conducted on organisms
8 inhabiting lakes contaminated
9 with beta-emitting and
10 gamma-emitting
11 radionuclides."

12 My question is: She goes on
13 to say:

14 "But there does not appear to
15 be any such experiments
16 conducted on..."

17 other lakes, namely Beaverlodge Lake.

18 I am not sure the location of
19 Beaverlodge Lake in relationship, but my question
20 is: Is it necessary or should there be ongoing
21 experiments carried out on other lakes, other than
22 what was referred to in Ms Shiell's report?

23 MR. PEREIRA: I will request
24 Dr. Thompson to respond to the question.

25 DR. THOMPSON: Good morning.

1 I think the microphone may not
2 be working. I am not 100 per cent sure. It is
3 fine now.

4 My name is Patsy Thompson and I am
5 the Dr. Thompson that Mrs. Shiell refers to.

6 In the presentation that was made
7 to the panel hearing for the environmental impact
8 statements for McArthur River, Cigar Lake and
9 McClellan, the studies that were quoted were those
10 that were conducted on Department of Energy sites
11 in the U.S. where ponds were mainly contaminated
12 with radionuclides and there were very few other
13 co-occurring contaminants.

14 In those cases, studies on fish
15 and invertebrates living in sediment were done to
16 look at the effects of radionuclides on those
17 organisms.

18 None of those sites had
19 alpha-emitters in the water or in the sediment.
20 It is clearly not a similar situation in northern
21 Saskatchewan uranium mine sites.

22 The Beaverlodge site that
23 Mrs. Shiell refers to is in northern Saskatchewan.
24 It was operated up until 1983, after which time it
25 was decommissioned.

1 There are several lakes on the
2 Beaverlodge -- the old Beaverlodge property that
3 are contaminated by metals and radionuclides that
4 were released during the operation.

5 We have reviewed several reports
6 that have been conducted recently, over the last
7 10 years, by Cameco and we are aware of
8 environmental effects on organisms living in those
9 receiving environments. However, because there
10 are metals and radionuclides in those
11 environments, it is very difficult to say exactly
12 what contaminant is causing -- what effect is
13 being observed on fish for example.

14 It is more likely that the
15 observed effects are due to several contaminants
16 present at the same time. So those lakes are not
17 appropriate to conduct studies on alpha-emitters
18 per se.

19 We do use the information from
20 Beaverlodge and from other sites that have
21 received treated effluent containing radionuclides
22 and metals and have used the information to the
23 extent possible in making decisions on what types
24 of releases can be allowed from current operations
25 to ensure that the environment is protected.

1 So that information is used, but
2 it would be difficult to use those sites to
3 conduct controlled experiments on alpha-emitters.
4 That is the reason it hasn't been done.

5 THE CHAIRPERSON: Mr. Graham.

6 MEMBER GRAHAM: Another question
7 to Dr. Thompson I guess.

8 Because there will be an increase
9 in production levels, because this application
10 pertains to increased production levels, will
11 there be increased research or increased tests
12 being done on lakes around or on the water
13 supplies around McClean Lake?

14 DR. THOMPSON: The requirements
15 that were developed for the McClean Lake operation
16 when it was first licensed back in 1999 were such
17 that they are not directly related to the amount
18 of production being done at McClean Lake.

19 What we did was, we took into
20 consideration all the modelling predictions that
21 were major in the EIS, the environmental impact
22 statement, based on predicted treated effluent
23 concentrations and the amount of effluent that
24 would be released over the operational period.

25 We took that information into

1 consideration and requested that COGEMA develop an
2 environmental effects monitoring program to
3 investigate potential environment effects on the
4 receiving environment, but also have triggers in
5 place so that additional studies would be
6 triggered should certain levels be exceeded in the
7 environment.

8 With the additional production
9 rate, the total amount of radionuclides being
10 released to the system over the operational life
11 won't change. It is just the duration of the
12 release that will change.

13 The program, as it is designed,
14 requires certain measurements to be taken
15 periodically and if certain triggers are exceeded
16 then the requirement is to go into a more detailed
17 assessment phase. So the more detailed assessment
18 phase would cover things that could happen that
19 were not predicted to happen.

20 So the program, as it is now,
21 accommodates changes in production and potential
22 changes in environmental effects.

23 MEMBER GRAHAM: One other
24 question, just for clarification.

25 If there are significant

1 increases, if there are significant changes, do
2 these come back to us as a significant development
3 report or do they just go to the licensee to
4 rectify? How are they dealt with? How do we know
5 if there has been a major problem?

6 That is a clarification to the
7 Chair or to staff.

8 MR. PEREIRA: It is Ken Pereira
9 responding.

10 We have certain criteria for
11 reporting to the Commission on significant
12 developments, significant events, but it depends
13 very much on the nature of the increase. If it is
14 not something that is of immediate concern, then
15 we would report it to the Commission in our
16 regular reports, but if it is an accident, a spill
17 that is unusual, then yes, it would come to the
18 Commission in the way of a significant development
19 report.

20 MEMBER GRAHAM: I am not
21 necessarily talking about a spill, but I am just
22 talking about increased levels and unforeseen
23 things happening due to climate change or whatever
24 it might be, excess precipitation, and so on. If
25 that happened and there were major changes, does

1 it come -- really the question I am asking is:
2 How are the public made aware of it, or is it just
3 within internal?

4 MR. PEREIRA: Ken Pereira again
5 responding.

6 In our strategy for longer term
7 licences we do have a plan to provide interim
8 reports to the Commission and all of the
9 performance data and environmental protection
10 results would be recorded in those reports and so
11 the information would be provided to the
12 Commission and to the public via such
13 presentations on a scheduled basis.

14 THE CHAIRPERSON: Dr. Giroux.

15 MEMBER GIROUX: Just following up
16 on that last answer, you are talking about the
17 interim report. This would be presented in an
18 open session such as this one here with
19 intervenors having the same opportunity to make
20 comments. That is your intention?

21 MR. PEREIRA: Ken Pereira again.

22 Our intention is, yes, to provide
23 the information to the Commission in an open
24 meeting.

25 MEMBER GIROUX: Thank you.

1 My further question is concerning
2 the extension to four years -- I am talking to
3 staff -- in your brief you mention and argue that
4 there are no disadvantages to going this way, but
5 you don't spell out what advantages there might be
6 from staff's point of view. We have heard about
7 the applicant.

8 MR. PEREIRA: Ken Pereira
9 responding.

10 The advantages in going to a
11 longer license term, if the licensee's operation
12 is in a stable phase of operation, is that we have
13 more time to undertake a compliance activity.
14 Compliance activities comprise assessments of
15 their programs, audits of the various activities,
16 it could be health, physics, environmental
17 protection, quality management. So staff then
18 have time in between license renewal work to carry
19 out systematic assessments to confirm that there
20 is in fact effective protection of health, safety
21 and the environment.

22 MEMBER GIROUX: Would you go
23 through the same exercise that Dr. Barnes
24 inflicted on COGEMA and tell us in terms of
25 numbers of resources? Do you have any feeling for

1 the order of magnitude of the time that you might
2 save and apply differently?

3 MR. PEREIRA: I will ask
4 Mr. McCabe to provide the more detail on our
5 activities, the scope of activities spent on
6 licensing and compliance.

7 MR. McCABE: Thank you.

8 Rick McCabe speaking.

9 We have never really kept close
10 track of that time that we utilize.

11 What we have done is, in
12 developing position profiles we have looked at
13 this over a longer period of time and we estimate
14 that the licensing -- I guess you have to
15 integrate both what we do in assessment and
16 licensing.

17 I am only speaking for our own
18 section. The others would vary significantly.

19 But from our own section, we spend
20 about 40 to 50 per cent of our time doing
21 assessment and licensing, so that is a significant
22 amount. We have eight people, so we spend, I
23 would say, half of our time on this type of
24 function. I can't give you any cost estimates or
25 anything like that, but it is in that range, with

1 the two year licensing term.

2 MEMBER GIROUX: Thank you.

3 THE CHAIRPERSON: If I may, just a
4 clarification.

5 The second part of Dr. Barnes'
6 questions to the licensee was with regard to
7 the -- or the reply was with regard to the time
8 when you started the process. Could the staff
9 confirm that that is the start-up process on a
10 two-year license when exactly you start up?

11 MR. PEREIRA: Ken Pereira
12 speaking.

13 Yes, the time cycle is that long.
14 It starts about nine months ahead of the date of
15 the expiry of the licence.

16 THE CHAIRPERSON: Dr. Giroux.

17 MEMBER GIROUX: Yes. I would now
18 turn to Mrs. Shiell's letter or brief.

19 On page 4 there are two statements
20 that I would like staff to respond to. The first
21 one, she says, at the end of the second paragraph:

22 "It is possible that the
23 genetic and somatic effects
24 are occurring, but they are
25 not being detected."

1 A question to staff is: Is that
2 any concern? Is there anything that can be done
3 with that?

4 It is a very general statement.
5 Do you have a reaction?

6 MR. PEREIRA: I will request
7 Dr. Thompson to comment.

8 DR. THOMPSON: I am Dr. Thompson.
9 The environmental monitoring
10 information that is being collected, both for
11 routine operational work, as well as the data
12 collected for the status of the environment
13 reports for all the facilities, do look at somatic
14 effects, essentially effects that would affect
15 community structure, reproduction capacity of fish
16 or benthic invertebrates. So this information on
17 somatic effects is available.

18 What is not available directly is
19 direct measurements of genetic damage, damage to
20 DNA for example or chromosomes. Those studies,
21 currently the methodologies don't exist to do this
22 on a routine basis. There are more studies that
23 are being done in laboratories, the methods don't
24 exist to do it routinely.

25 However, all the information we

1 have so far on genetic effects shows that there is
2 a close relationship between the amount of genetic
3 damage and reproductive capacity. So indirectly,
4 by measuring reproductive capacity we are tracking
5 genetic damage and populations.

6 MEMBER GIROUX: Thank you.

7 The second question concerns the
8 next section where she argues that there is a
9 mixing zone with Sink, Vulture and McClean Lakes.
10 I think these are within the parameters. This is
11 where the treated water is sent to. She says this
12 is not described in the CEAA.

13 "By what authority is one
14 allowed to irradiate
15 organizations in the
16 `mixing zone'?"

17 The question to that -- I think
18 this has to be addressed -- is that inherently
19 part of the original licence that the mining
20 operation will impact within its own perimeter?

21 MR. PEREIRA: Ken Pereira again.
22 I will request Dr. Thompson to comment on that
23 question.

24 DR. THOMPSON: In the licensing
25 and then doing assessments we don't consider

1 mixing zones per se. We do assess potential
2 environmental effects to all receiving environment
3 water bodies whether they be near field or far
4 field.

5 That being said, when McClean Lake
6 was first licensed and when the environmental
7 impact statements was put forward and the panel
8 decision made, it was recognizing that both Sink
9 and Vulture Lakes would be affected. To
10 compensate for those effects, COGEMA signed a fish
11 habitat compensation agreement with the Department
12 of Fisheries and Oceans.

13 So this has been part of the
14 licensing for McClean Lake, recognition that those
15 two water bodies would be affected and they have
16 been compensated for.

17 MEMBER GIROUX: Thank you.

18 A final question to COGEMA now.
19 This is a completely different issue.

20 It is mentioned, I think it is in
21 staff's presentation, that there might be some
22 milling of the Cigar Lake or in the JEB mill at
23 McClean Lake. We have another application from
24 Cameco which says that they are planning to mill
25 Cigar Lake or at the Rabbit Lake.

1 Is there an agreement that both of
2 you might be sharing the Cigar Lake and milling it
3 either at McClean or at Rabbit Lake?

4 MR. POLLOCK: The short answer is
5 yes, there is such an agreement.

6 The plans -- we would hope to be
7 back with a request for an amendment, as we have
8 indicated previously, within a period of several
9 years or perhaps less than three, two to three.

10 The plans are, or proposed plans
11 are that ore would be taken to the JEB mill -- and
12 this requires, obviously, a future license
13 amendment. It is not part of today's
14 consideration.

15 One could look at either doing it
16 two ways.

17 One could either split the ore
18 itself and take some of the ore to McClean and
19 some to Rabbit, or one could take all of the ore
20 to McClean and, in effect, run the ore through the
21 front end of the mill at McClean, the leaching
22 circuit.

23 The existing leaching circuit at
24 McClean, if rearranged somewhat, is quite capable
25 of providing two parallel leaching circuits which

1 would take all of the Cigar Lake ore without any
2 major capital expenses for modification or
3 expansion of that leach circuit.

4 One could then split the aqueous
5 solution, the aqueous solution that then contains
6 the uranium, and one could then process that
7 aqueous solution into yellow cake, some at McClean
8 and some at Rabbit.

9 Certainly that type of proposal in
10 terms of the Rabbit Lake operation would require a
11 new environmental assessment and that assessment
12 has been started sometime ago. It is not yet
13 completed. One needs to have a fairly specific
14 plan of action before you can complete an
15 environmental assessment of that plant.

16 THE CHAIRPERSON: Mr. Graham.

17 MEMBER GRAHAM: Thank you.

18 My questions are around the
19 decommissioning of financial guarantees. I guess
20 first of all they would be to CNSC staff.

21 I understand there is a
22 \$35 million decommissioning guarantee in place at
23 the present time, but condition G4 requires CRI to
24 prepare a revised preliminary decommissioning
25 plan.

1 I just want to know, where does
2 that revised plan stand and when do you expect to
3 have the revised plan in place, either to -- well,
4 I guess it should be to CRI.

5 MR. POLLOCK: I was just looking
6 to re-read the precise clause.

7 I believe that the clause ties the
8 future mining of the Sue A and Sue B deposits to
9 this revised plan, so clearly we will need to
10 submit that in sufficient time before we plan to
11 mine those deposits so that we don't jeopardize
12 our schedule, or if we don't submit it in time
13 then we do clearly jeopardize our schedule.

14 These are not large changes to
15 the existing plan. Basically one would simply
16 make arguments as to why these pits can be
17 allowed to flood after perhaps placing a layer of
18 till on top of any residual mineralized material
19 at the bottom.

20 There are also certain actions we
21 have taken over the last couple of years which
22 would tend to reduce our future decommissioning
23 cost. We have done quite a bit of reseeded, for
24 example, of disturbed areas.

25 So whether or not the dollars

1 involved would go up or go down is yet to be
2 determined, but it would be, either way, a
3 small change.

4 Clearly the ball is in our court.
5 We need to formally submit this for approval in
6 time to have it done before we plan to mine Sue A
7 and Sue B.

8 MEMBER GRAHAM: I guess my
9 question to the CNSC staff would be: If the
10 \$35 million amount would not decrease, it would
11 probably increase. Is that correct.

12 MR. PEREIRA: It is difficult to
13 judge at the moment, but it is likely that it will
14 increase.

15 It is Ken Pereira responding.

16 MEMBER GRAHAM: Thank you.

17 Another question to CRI.

18 I guess the other question I would
19 have is: Your \$35 million that is in place now is
20 assured by letters of credit. Are those letters
21 of credit guaranteed by a financial institution or
22 just by the corporation?

23 MR. POLLOCK: These are letters of
24 credit which we pay a fee or a premium, whatever
25 the right term is, to large recognized financial

1 institutions, such as banks, for the provision of
2 a letter of credit.

3 MEMBER GRAHAM: And there is a
4 tracking of that such that if something happened
5 whereby the premiums were not being paid, CNSC
6 would be aware of that? They could follow up on
7 it, I presume?

8 MR. PEREIRA: Yes, that is
9 correct.

10 MEMBER GRAHAM: Thank you.

11 THE CHAIRPERSON: I have a
12 question, Mr. Pollock, with regards to your
13 comments about offering information to
14 Mrs. Shiell, if she so wishes it.

15 In your earlier CMD document, you
16 talked about the public information plan that you
17 have in the north and what you use regularly to
18 communicate on that basis.

19 Are there any provisions at this
20 time for any regular type of public information to
21 be available to people such as Mrs. Shiell who
22 live in Saskatoon?

23 MR. POLLOCK: There are several
24 broadly based materials which are distributed
25 broadly throughout the north. If she is not on

1 the distribution list, we can certainly add
2 interested local stakeholders. I can't tell you
3 this morning whether she is or is not on the
4 distribution list.

5 These include a publication called
6 "Opportunities North", which covers all of the
7 mining activities, which is basically published
8 through the province.

9 We also, as COGEMA, provide a
10 regular community update, which is distributed to
11 every native band and municipal jurisdiction.
12 There are about 200, I believe, on the
13 distribution list for that.

14 Then we have specific programs if
15 there is a project that we wish to go out and
16 discuss directly.

17 I should have added, as well, that
18 there are regular meetings with the Environmental
19 Quality Committee which represents northern
20 residents in the Athabaska Basin. I can't tell
21 you for sure whether these distribution lists do
22 or do not include Mrs. Shiell. There is certainly
23 no reason why they shouldn't.

24 THE CHAIRPERSON: To be more
25 specific, there isn't a regular meeting schedule

1 between your company and public information
2 meetings, or whatever, outside of the north, for
3 example in Saskatoon.

4 MR. POLLOCK: No. We organized a
5 meeting specifically for the two -- there are two
6 environmental assessments that we are involved in
7 that are currently active. One is this 6 to 8
8 million pound increase, and the other is a
9 proposal to bring Cigar Lake waste rock for
10 disposal at the Sue C pit, again another item that
11 you will, I expect, see in the future in front of
12 the Commission.

13 We went to some lengths to
14 organize a public meeting in Saskatoon. We
15 e-mailed out on their own distribution list to a
16 great number of people representing environmental
17 organizations, including Mrs. Shiell. We
18 advertised twice in the newspaper and drew the sum
19 total of -- I believe there were six or seven
20 people there.

21 If I didn't count the company
22 representatives of the meeting or regulator agency
23 representatives, there were some six or seven
24 people there.

25 I will give credit to Mrs. Shiell.

1 She was one of those six or seven.

2 I admit that is only a one shot
3 type of meeting, but it was on something that if
4 there were concerns, one would have thought it
5 might have drawn larger crowds.

6 I guess my first reaction would be
7 that if we were to simply check that our
8 distribution lists for information included those,
9 together with information as to how we may be
10 contacted, that would appear to us to be an
11 appropriate level.

12 I am not sure that having meetings
13 in empty halls is necessarily very effective.

14 THE CHAIRPERSON: Thank you.

15 My second question is to the CNSC
16 staff.

17 With regards to Item 2.4 reporting
18 on CMD H18.B, page 4, further to the questions
19 that were raised by my fellow Commission members,
20 I want to look at the regular reporting that goes
21 on at this time and connect that to any reporting
22 that could be foreseen on an interim basis during
23 a licence period.

24 These are reports, my
25 understanding, 2.4, for the Commission staff.

1 These are regular reports. Is that correct?

2 What would be the provision that
3 would be possible in terms of the licensee
4 reporting to you and then you reporting to the
5 Commission?

6 MR. PEREIRA: Ken Pereira
7 responding.

8 The regular reports are reports
9 that are required as a condition of the licence:
10 an annual report; monthly reporting on radiation
11 protection data; reports in response to action
12 levels that are specified in the licence.

13 This is part of the normal
14 compliance monitoring that staff undertake in
15 confirming that the safety is being managed
16 effectively by the licensee.

17 In terms of what we report to the
18 Commission, we are still developing our strategy
19 for that. I expect that what we would report to
20 the Commission would be information from the
21 compliance programs, information on protection
22 with respect to the environment, health and
23 safety, and also reports on occupational health
24 and safety.

25 So a general report on the

1 performance of the licensee over the period since
2 the licence was issued.

3 I will ask Mr. McCabe to comment
4 further, if he wishes to do so.

5 MR. McCABE: Thank you,
6 Mr. Pereira.

7 We have a staff member dedicated
8 to reviewing the monthly reports. All the
9 environmental reports and the radiation protection
10 reports are reviewed by our environmental
11 inspector, not only for compliance with the limits
12 but also for unfavourable trends in concentrations
13 or dose rates, and things like that.

14 These are followed up by an
15 investigation or a follow-up with the company, and
16 corrective action is taken as needed. These
17 reports get quite close scrutiny, not only by that
18 individual but by the project officers.

19 And we would report, as we have in
20 the past, unfavourable trends if we found
21 anomalous samples. There is a procedure for
22 follow-up. Those are checked. If that result is
23 confirmed and is significant, then we would
24 certainly report that.

25 THE CHAIRPERSON: Dr. Giroux.

1 MEMBER GIROUX: I have a final
2 question to COGEMA.

3 You mentioned that you were
4 replying sort of privately to Mrs. Shiell. Since
5 her own brief was on the public record, maybe your
6 answer should also be in the public record and
7 submitted to us so that we can read it and see
8 what your answer is.

9 MR. POLLOCK: Certainly we have no
10 objection if that represents the Commission's
11 wishes.

12 The first part of the letter very
13 much substantially corresponds to what you have
14 already seen this morning. It is worded in such a
15 way that it is in the form of a letter to this
16 person as opposed to submission to the Commission.

17 My Director of Environment has
18 worked on it further over the last day or two
19 since he got back from holidays, and we have tried
20 to then relate these general points which were
21 contained in our submission this morning. I have
22 tried to relate them to the individual points that
23 she raised in her submission.

24 So what we have is in effect the
25 general response that you have seen in this

1 submission this morning, and then I am trying to
2 relate that.

3 Plus there are some relatively
4 picky technical details that we wanted to point
5 out; that we don't believe her technical point is
6 quite correct. We are trying to get down into
7 some of these picky details as well.

8 Plus, we are providing a chart.
9 We did these analyses of trends before, using
10 statistics, and have now reported the actual
11 quantitative statistical results.

12 We have put together what I hope
13 is a lot simpler chart that hopefully makes this
14 point about there being no trend in releases of
15 key contaminants with production in a more
16 transparent and self-evident manner than
17 statistics.

18 Certainly if it is the
19 Commission's wish that this also be on the record,
20 we have no objection or problem with that at all.

21 THE CHAIRPERSON: It is the
22 Commission's wish, thank you.

23 Are there any further questions?

24 --- No response

25 THE CHAIRPERSON: Thank you very

1 much, Mr. Pollock.

2 MR. JACK: This completes the
3 public hearing on the matter of an application by
4 COGEMA Resources Inc. for a licence to operate the
5 McClean Lake Operation and to increase the
6 production limit.

7 The Commission will deliberate and
8 will publish its decision in due course. That
9 decision will be posted on the CNSC's website, as
10 well as distributed to participants.

11 I thank all participants for their
12 participation.

13 THE CHAIRPERSON: We will now
14 taken an eight-minute break. It is now 9:32, and
15 we will ask OPG to come to the front for the next
16 hearing.

17 We will reconvene at 9:40. Thank
18 you.

19 --- Upon recessing at 9:32 a.m.

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