



Environmental Appeal Board

APPEAL NO. 95/31(b) - WASTE

In the matter of an appeal under section 44 of the *Waste Management Act*, R.S.B.C. 1996, c. 482.

BETWEEN: Celgar Pulp Company **APPELLANT**

AND: Deputy Director of Waste Management **RESPONDENT**

AND: Pulp, Paper and Woodworkers of Canada **THIRD PARTY**

BEFORE: A Panel of the Environmental Appeal Board
Katherine Hough, Panel Chair
Harry Higgins, Member
Elizabeth Keay, Member

DATE: September 9-11, 1997, concluded by way of written submissions on March 12, 1998

PLACE: Castlegar, B.C.

APPEARING: For the Appellant: Daniel Bennett, Counsel
For the Respondent: Dennis Doyle, Counsel
For the Third Party: Keith Simmonds

APPEAL

Celgar Pulp Company (Celgar) filed two appeals with the Environmental Appeal Board. The first appeal was against a February 8, 1996 decision (the "February 8th decision") of the Deputy Director of Waste Management, J.D. McTaggart-Cowan, and the second appeal was against a March 13, 1996 decision (the "March 13th decision") of the Deputy Director. Both of the Deputy Director's decisions concerned permit amendments issued June 30, 1994 by the Regional Waste Manager (the "RWM"), Kootenay Region for permit PA-03080 (the "Original Permit"). The two appeals were heard together.

BACKGROUND

Celgar operates a pulp and paper mill near Castlegar in the West Kootenays by permit under the authority of the *Waste Management Act*. The company operates as a joint venture between CITIC B.C. Inc. and Power Consolidated (China) Pulp Inc. In the late 1980's Celgar proposed to expand its bleached kraft pulp mill and filed the requisite reports. The Celgar Expansion Review Panel (the "Review Panel")

was established by government, in response to Celgar's proposal, to conduct a major environmental review of the proposed expansion. The Review Panel held extensive hearings where it heard numerous submissions and received as many written reports. In February 1991, the Review Panel submitted its final report. Based in large part on the Review Panel's recommendations, the expansion was approved and a permit granted. Modernization of the plant was commenced and improvements were completed in 1993. A large number of the recommendations of the Review Panel were included in the Original Permit, dated December 22, 1993. For the most part, the recommendations concerned the impact of emissions on the local airshed. The Review Panel was particularly concerned with the control of SO₂ (sulphur dioxide) and NO_x (nitrogen oxides) emissions and that the Best Available Control Technology ("BACT") be implemented by Celgar.

Beginning in 1994, after almost a full year of operation, Celgar requested 6 minor and 7 major amendments to the Original Permit. These requests were directed to the RWM and included permissible equipment use, changes to allowable emission levels and changes to monitoring requirements. After receipt of technical reports prepared by Ministry of Environment, Lands and Parks ("MELP") staff, the RWM accepted some of the proposed amendments, however, several were denied.

Celgar appealed the RWM's decision refusing to grant some of the amendments regarding discharge limits and the elimination of certain monitoring requirements to the Deputy Director. The amendments to the Original Permit were also appealed by the Pulp, Paper and Woodworker's Union (the "Union") on separate grounds. The Union's main concern was that the amendments would eliminate key elements of the monitoring program, particularly with respect to SO₂ and NO_x emissions.

The Deputy Director heard the appeals together and issued two separate decisions.

On February 23, 1996, Celgar appealed the February 8th decision dismissing their appeal of RWM's decision not to grant its application to amend the Original Permit. Celgar is appealing the Deputy Director's order upholding the RWM's decision to (a) continue the annual mass loading requirements for SO₂ and (b) to continue NO_x monitoring from the Recovery Boiler and the #2 Power Boiler.

On February 29, 1996 Celgar appealed the March 13th decision upholding, in part, the Union's appeal of the RWM's decision to amend certain sections of the Original Permit. The March 13th decision was the primary focus of the appeal heard by the Panel. This decision is problematic since it contains both recommendations and orders.

Celgar is appealing the following orders of the March 13th decision:

- a) The Ministry is to set in the Permit a clear 5% target for the maximum amount of use of the #2 Power Boiler and to investigate how best to establish higher emission fees for each month when the target is not met. In addition, action should be taken to review other potential methods of dealing with non-condensable gases ("NCG") if the situation continues so as to bring SO₂ emission levels from this source back down to the 235 ppmv level.

- b) With regard to the meteorological monitoring, the full stack-height monitoring system is to be reinstalled if it has been taken down and is to become a part of the requirement of the Permit again until it can be shown that only very limited new information is being gathered and a strong correlation has been developed with the other monitors, particularly under critical conditions, or 5 years of data have been collected, whichever comes first.
- c) A NOx limit is to be placed on the #2 Power Boiler based on the results that have been collected to date and the Continuous Emissions Monitoring ("CEM") reinstalled. This instrument is to be in place until an adequate correlation between the operation and the emissions have been ascertained such that, through the use of proxy information, the NOx levels can be anticipated.
- d) With respect to the lime kiln, the SOx limit is to remain as amended until there is a better understanding of the reasons for the fluctuations, a NOx level is to be established, and NOx CEM equipment is to be put in place and operated for a minimum of 1 year of continuous lime kiln operation provided that, in that time, a clear correlation can be made between operating conditions and NOx levels. Once the correlation has been developed, the CEM may be discontinued.

Celgar also appealed the order in the March 13th decision regarding the ecosystems monitoring program (or terrestrial monitoring system as referred to by the parties). However, this issue was abandoned by the Appellant since they had negotiated acceptable terms and conditions of the monitoring programme with the current RWM. No further mention of this issue will be made.

After the Deputy Director's decisions were rendered, the Environmental Appeal Board, on July 5, 1996, granted Celgar's request for an interim stay of the March 13th decision pending the final decision of the Board.

ISSUES

1. Does the March 13, 1996, decision prohibit the use of the #2 Power Boiler as a CNCG incinerator and is there a need for a stand alone incinerator on-site?
2. Should the permit require a stack-height on-site meteorological testing station?
3. Should the permit require an emissions limit for NOx on #2 Power Boiler along with the requirement for CEM for NOx on that boiler?
4. Should the permit require an emissions limit for NOx on the Lime Kiln along with the requirement for CEM for NOx on the lime kiln?

The Panel heard three days of evidence and received nine exhibits (not including the documentation received in the written submissions of March 1998). Exhibit number 3 alone included 26 documents. The Appellant called Jim McLaren, the

Environmental Manager for Celgar, as its witness. This is the same witness who testified at the original appeal before the Deputy Director. The Respondent called Carl Johnson, an employee of MELP and head of the Industrial Section for the Kootenays. The only person to appear for the Union, and the only witness heard on its behalf, was Keith Simmonds, a member of the Union, and an employee of Celgar in the steam and recovery department.

Although it was unusual to do so, the Panel decided to allow Mr. Simmonds to make his presentation on behalf of the Union before the other parties. This was done because it appeared that while Celgar and the current Deputy Director had come to an agreement on amendments and terms, the Union was clearly opposed to them. It appeared to be in the best interests of all parties that the Union's objections be aired first so that the other two parties might be in a better position to respond to them. Mr. Simmonds was given the opportunity to cross-examine the other witnesses.

1. Does the March 13th decision prohibit the use of the #2 Power Boiler as a CNCG incinerator and is there a need for a stand alone incinerator on-site?

It is clear from reading the decision of the Deputy Director that a number of concerns were raised by the Union as well as the general public about the continued use of Celgar's #2 Power Boiler to incinerate both dilute non-condensable gases ("DNCG") and concentrated non-condensable gases ("CNCG"). Their concerns surround the increased levels of SO₂ emissions when both DNCG and CNCG are burned in the #2 Power Boiler. The evidence before the Panel is that the #2 Power Boiler is not equipped to deal with SO₂ emissions (i.e. it does not have SO₂ scrubbers) and therefore, the burning of CNCG in the #2 Power Boiler produces higher sulphur loadings on the environment.

The Original Permit specified that the incineration of CNCG in the #2 Power Boiler occur only in emergency situations or where the lime kiln was undergoing maintenance and when approved by the RWM. The Original Permit also required that Celgar, within one year of operation, determine the SO₂ emissions from the #2 Power Boiler when used as an incinerator for both DNCG and CNCG, during lime kiln outages, and when only DNCG were being burned. If the emission levels were considered unacceptable, then the RWM could require a stand alone incinerator. The Original Permit authorized SO₂ emission limits of 235 ppmv on a 24 hour average while burning DNCG, and the emissions had to be monitored on a continuous or semi-continuous basis. In the March 13th decision, the Deputy Director stated the target was to use the #2 Power Boiler no more than 36 hours per month (5% of the time) to burn CNCG. The remainder of the time CNCG were to be incinerated in Celgar's lime kiln.

The RWM amended the Original Permit on June 30, 1994 (the "Amended Permit"). The Amended Permit provided that SO₂ emissions while burning DNCG remain at 235 ppmv over a 24 hour average. However, a new limit of 1700 ppmv was established for SO₂ emissions over a 24 hour average while incinerating both DNCG and CNCG. CEM was also required. The emission limit for incinerating DNCG and CNCG was not to come into effect until July 1, 1995. The wording with respect to

emergencies and the use of #2 Power Boiler as a bypass incinerator during lime kiln outages remained the same. Section 1.10 of the Original Permit was deleted and in the Amended Permit replaced with section 2.9 which focused on the lime kiln as a CNCG incinerator. The controversial clause is 2.9.3:

If by July 1, 1995 the lime kiln operating time as a CNCG incinerator does not achieve the target of 95% of each month and pollution occurs due to elevated sulphur dioxide emissions associated with CNCG incineration in No.2 Power Boiler, the Regional Waste Manager may require the installation of a stand alone CNCG incinerator.

By July 17, 1995, the RWM advised Celgar that he would not require a stand alone incinerator but still required advance notice of planned lime kiln shutdowns. This advice was given while the appeals were being undertaken by Celgar and the Union. Also while the appeals were being heard, the RWM, in permit amendments dated August 17, 1995, deleted that portion of section 1.3.2 that established SO₂ emission limits while incinerating CNCG and DNCG in #2 Power Boiler. Section 2.9.3 was renumbered section 2.6 and retained and the emission limit for SO₂ while incinerating DNCG was increased to 300 ppmv.

The Deputy Director's March 13th decision clearly confirmed that the #2 Power Boiler was to be used as a back up incinerator and not as a continuous incinerator. Celgar stated that they had attempted to meet the 95% target for lime kiln usage (and 5% for #2 Power Boiler), however, the target was rarely met. In the evidence before the Panel, Celgar admitted that, since 1995, the best monthly average for lime kiln usage was 88%.

In the hearing before the Panel, Celgar confirmed that it is still having problems with lime kiln outages. The RWM also confirmed that use of #2 Power Boiler is of concern but he is satisfied that Celgar is making adequate attempts to rectify the situation and, therefore, does not require a stand alone incinerator at this time. However, the concern of the general public, as well as the Review Panel about the amount of SO₂ emissions into the valleys surrounding Castlegar, is no less valid today than when the Review Panel gave its final report in 1991. The optimism of Celgar that projected that SO₂ levels could be minimized through the use of the lime kiln has not been borne out. Celgar has not been able to meet its targeted emission levels for #2 Power Boiler on a consistent basis.

It is noted that, while the advent of the new lead smelter at Cominco has contributed to the reduction of ambient SO₂ levels at the Robson monitoring station, this has little bearing on the evidence that Celgar cannot and does not meet the emission levels set out in its permit. The reduction of SO₂ emissions by Cominco will result in increased loading of the air around Castlegar by Celgar. That is, while the overall emissions decrease, Celgar's portion of the emission total will increase.

After four years of operation, there is still no adequate correlation between the SO₂ emissions from the Celgar plant and the receiving environment. In the evidence presented to the Panel, it is clear that high volumes of SO₂ can have a significant impact on both human health and the viability of vegetation.

Celgar, through Mr. McLaren, advised the Panel that other methods of reducing SO₂ emissions from #2 Power Boiler, such as scrubbers, continue to be investigated. The Panel notes that, despite four years of problems, this investigation has resulted in no action by Celgar. Without some incentive, such as establishing higher emission fees when targets are not met, as set out in the March 13th decision, the Panel finds that Celgar will continue to use #2 Power Boiler in excess of the amount intended by government when the Original Permit was first issued, and as reaffirmed in the Amended Permit. The Panel received evidence that other lime kilns are being operated at 95% capacity in British Columbia and Canada, yet Celgar is still unable to meet its targeted usages.

The Panel agrees with Celgar and the RWM that the Deputy Director did not order a stand alone incinerator to be put in place by Celgar. The March 13th decision mirrored section 2.9.3 of the Amended Permit: that a stand alone incinerator could be required. The language is couched in terms of suggestion in encouraging Celgar to meet the targeted levels through a fee incentive programme and, if that incentive failed, then stronger measures could be required. However, there is no fee structure available within the *Waste Management Act* to allow for floating fees when emission targets are not met.

The Panel finds that the expenditure of \$5m to install a stand alone incinerator is excessive at this time. However, the Panel is not convinced that Celgar has done everything it can to bring the lime kiln up to its targeted usage. The Panel notes from the evidence that when a turbo generator needed repair, repairs were undertaken immediately as this affected the mill operation. When the lime kiln needed repair (and continues to need repair) the same swiftness of response is notably lacking. There is other readily available technology to reduce the SO₂ emissions from #2 Power Boiler whenever the lime kiln is not operating.

The Panel finds that the Deputy Director allowed the use of the #2 Power Boiler as a CNCG incinerator in emergency circumstances or when the lime kiln was inoperable. However, the use of the #2 Power Boiler as a bypass CNCG incinerator was not to exceed 5% per month.

2. Should the permit require a stack-height on-site meteorological testing station?

In the evidence produced by Celgar before the Review Panel, the company proposed an elaborate monitoring system and MELP responded by setting up a preliminary list of stack monitoring requirements. Celgar also reaffirmed its commitment to SO₂ monitoring before this Panel. However, that commitment is based on the assumption that on-going monitoring is not required when emission levels remain static or decrease and no problems with the receiving environment have been proven.

Celgar produced evidence of the on-going monitoring of the plant emissions. Celgar maintains monitoring stations at Robson and the Castlegar Hospital. At one time, it also operated a mobile unit at Scottie's Marina. The evidence from Mr. Johnson of MELP is that the data already collected by the on-site monitoring station

in issue is sufficient for their purposes. The Union is opposed to the deletion of the on-site monitoring unit from the Original Permit.

After reviewing the evidence, the Panel agrees that there is no basis for the Deputy Director's order, in the March 13th decision, requiring five more years of monitoring from a stack-height on-site monitor. The monitoring stations already in operation are satisfactory indicators of the contaminants being introduced into the environment and the on-going terrestrial monitoring programme will evaluate the impact on the receiving environment. To require another monitor will not assist in assessing the impact on the surrounding environment.

3. & 4. Should the permit require an emissions limit and monitoring for NOx on the #2 Power Boiler and the lime kiln?

These issues will be dealt with together since the evidence is the same for both the #2 Power Boiler and the lime kiln.

The issue of NOx emissions was canvassed by the Review Panel in its 1991 report. The Original Permit allowed NOx emissions of no greater than 325 ppmv from #2 Power Boiler and 100 ppmv from the lime kiln. Monitoring was continuous or semi-continuous for the #2 Power Boiler and monthly for the lime kiln. When the amendments were approved in June 1994, no emission levels were stipulated for either the #2 Power Boiler or the lime kiln although the monitoring requirements remained the same.

The evidence presented to the RWM before the June 1994 amendments were made indicated that both the Union and members of the general public were vehemently opposed to the deletion of NOx limits. Despite these objections the deletions were authorized by the RWM. The Deputy Director, on appeal, ordered that new limits be established for the #2 Power Boiler and the lime kiln. Celgar appeals those orders.

Celgar has installed low NOx burners on the boiler, which has decreased the anticipated amount of NOx emissions. The Panel notes that, despite the lower emissions, Celgar was unable, in 1993-1994, to keep the NOx emissions from the #2 Power Boiler and lime kiln within the permitted limits. There was no evidence before the Panel that Celgar has been able to improve on their past performance and that NOx emission levels have decreased since 1994.

Celgar produced, for the Panel, a report prepared by H.A. Simons Ltd. dated October 1994 and titled: "A Technical Background Information Document on Pulp and Paper Mill Air Emissions". This report was prepared for MELP. MELP then prepared a response to it dated November 1995 and titled "Technical Memo". Both the Simons' report and the MELP response state that NOx monitoring is important and desirable. A July 1994 technical report, prepared by MELP staff, indicated that no further reductions in NOx emissions were necessary but it did not suggest the complete elimination of the regulations. The Technical Memo suggests a NOx limit of 125 ppmv over 1 hour (as opposed to the Simons Report of 240 ppmv over 24 hours) for large wood residue boilers (greater than 20 MW output) and no

limitations on small wood residue boilers (greater than 3 MW and less than 20 MW output).

While the Technical Memo did not suggest a maximum emission level for NOx emissions from lime kilns, it was acknowledged that limitations were desirable and that low NOx burners should be required. The Technical Memo also suggested that lime kiln operators "should demonstrate to a Regional Manager's satisfaction that the NOx emissions from the lime kiln/calcliner are minimized."

Celgar stated in its evidence that it cannot meet the 100 ppmv limitation imposed by the Original Permit. Although the Amended Permit removed all limitations, in his March 13th decision, the Deputy Director indicated that this was unacceptable and ordered that a new minimum was to be agreed upon. This has not been done.

The Panel finds that by reimposing NOx emission levels, the intent of the Permit will be met by ensuring acceptable NOx emissions from both the lime kiln and the #2 Power Boiler. The public, the Review Panel and MELP staff have all demonstrated that they understand the deleterious nature of NOx emissions. In the Original Permit the Government imposed stringent limitations of 325 ppmv on the #2 Power Boiler and 100 ppmv on the lime kiln to ensure that harm to the receiving environment was minimized. To remove all limitations, but retain quarterly monitoring, does not satisfy the requirement of low emissions set out in the Original Permit or in the Review Panel's recommendations. However, the Panel does agree with both the Appellant and the Respondent that continuous monitoring is not required. The current quarterly monitoring is sufficient to determine whether the emission levels are being met.

DECISION

In making this decision, the Panel of the Environmental Appeal Board has carefully considered the evidence and testimony placed before it by the parties, whether or not specifically referred to here.

The appeal is upheld in part.

1. No stand alone incinerator for CNCG is required at this time. That issue is left properly to the discretion of the RWM.
2. Celgar must continue to decrease its reliance on the #2 Power Boiler as a DNCG incinerator and other technology must be employed to ensure that when it is used as a backup for the lime kiln, that the SO₂ levels are kept to a minimum. However, the Panel stresses that this device is not to be used as a surrogate for reaching the 95% target usage for the lime kiln in burning DNCG and CNCG. While Celgar continues to work towards achieving a minimum 95% target usage for the lime kiln, the scrubber will ensure that SO₂ emissions from the #2 Power Boiler are kept to a minimum. To safeguard the environment it is also necessary to monitor and limit the amount of SO₂ emissions from the #2 Power Boiler when DNCG and CNCG are being incinerated.

3. NOx emission levels are to be imposed on both the #2 Power Boiler and the lime kiln but monitoring is to be reduced to quarterly.

Therefore the Panel makes the following orders:

1. Celgar must install an SO₂ scrubber on the #2 Power Boiler by December 1, 1998.
2. Clause 1.3 of the Amended Permit is amended to read:

Sulphur Dioxide 24 hour average 234 ppmv while incinerating DNCG
24 hour average 1700 ppmv while incinerating DNCG and CNCG
3. Clause 1.3 of the Amended Permit is amended to include:

NOx as NO₂ 325 ppmv
4. Clause 1.5 of the Amended Permit is amended to read:

NOx as NO₂ 250 ppmv
5. Clause 3.1.1.3 and Clause 3.1.1.5 are amended to read quarterly monitoring for NOx as NO₂ for both the #2 Power Boiler and the lime kiln respectively.

CONCERN

The Panel is concerned that during the time that this matter was under appeal to the Deputy Director, the RWM continued to change the clauses that were the subject of the appeal. The Panel considers these actions by the RWM to be inadvisable.

Katherine L. Hough, Member
Environmental Appeal Board

May 29, 1998