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Tuesday, April 23rd

Erica M. Hamilton
Commission Secretary
BC Utilities Commission
Sixth Floor, 900 Howe Street
Vancouver, BC
V6Z 2N3

Dear Ms Hamilton:

Enclosed please find Area D's Final Submission in Response to FortisBC Inc Application for a Certificate of Public Convenience and Necessity Advanced Metering Infrastructure (AMI) Project 2012 and Final Confidential Submission, as well as a list of the five authorities used in Area D's Final Submission, four of which are enclosed.

I have couriered the same information to FortisBC at their offices in Kelowna, and will email my Final Submissions to the appropriate intervenors, but do not have the technical capability to upload the authorities.

Please advise if I am expected to mail out the authorities to all intervenors, rather than expect them to access them through the BCUC website.

Respectfully submitted,

Andy Shadrack

Andy Shadrack
Director Area D
Regional District Central Kootenay

cc FortisBC

Final Submission
in Response to FortisBC Inc Application
for a Certificate of Public Convenience and Necessity
Advanced Metering Infrastructure (AMI) Project 2012

Submitted by
Andy Shadrack
Director, Area D
Regional District Central Kootenay

April 23, 2013

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Introduction

1. This is an application by FortisBC for a Certificate of Public Convenience and Necessity for an expensive, controversial, and regressive advanced metering infrastructure system for which FortisBC completely failed to adequately research and evaluate feasible alternatives.

2. While Area D supports the broad objectives of the Clean Energy Act and deployment of advanced metering in principle, it cannot support FortisBC's application for a Certificate of Public Convenience for its Advanced Metering Project in its current form.

Comparative Cost

3. Parts of the Area D economy, for example, like many regions of remote and rural BC, have been in recession since 2005. Understanding that electricity forms an integral part of a basket of costs that rural businesses have to contend with when trying to maintain profitability in the global marketplace, Area D asks whether the FortisBC application represents the best and most cost-effective means of deployment of advanced meter infrastructure in the FortisBC service area.

4. FortisBC asked Itron, the supplier of FortisBC's chosen RF-AMI system, which is the subject of this application, to supply it with a PLC-AMI cost estimate, upon which, after discussing cost comparisons with other technologies, FortisBC concluded:

> *Given the cost comparison, the 100 percent PLC option was eliminated from further consideration.*
>
> 1. *It does not allow all of the future benefits listed in section 6.0.*
> 2. *It is not consistent with metering system and services deployed to 1.8 million BC Hydro electricity customers*
> 3. *The resulting rate impact and NPV of the revenue requirement impact is not as favourable as compared to the proposed AMI project*
>
> (B-1, FortisBC Application, pp. 105 - 122 at p. 115, lines 1 to 7)

5. Area D hopes to demonstrate that the first and third points are incorrect, given which, the second point should not have been a determinative factor.

6. Idaho Power Company Ltd was able to successfully arrange, and conduct, a thorough, responsible, complete and unbiased bidding process in 2008, including appropriate preliminary investigation and requests for information and proposals. That process saw one PLC-AMI company, Aclara, compete with two RF-AMI bids from Itron and Elster. Idaho Power's decision to deploy Aclara's wired AMI option was made following an open bidding process that saw Itron and Elster RF-AMI RFP proposals fairly and squarely outbid.

(C13-18, Heintzelman to Shadrack, January 23, 2013)

7. FortisBC failed to conduct a similar process, and, as a result, appropriate and available technologies and their cost implications are not adequately considered in FortisBC's application. Area D submits that it is completely unjust and unfair that it has been left up to the intervenors in this proceeding to attempt to explore alternatives which FortisBC itself should have thoroughly investigated prior to considering making its application.

8. At Table 7.3.a - Gross PLC Capital and Operating Costs, under the Total column at the Total Operating Expenses intersect, FortisBC gives evidence that between 2013 and 2032 the total operating costs for PLC-AMI will be $63,304,000.

(B1, FortisBC Application, p 113, line 1)

9. At the equivalent table for RF-AMI, FortisBC then gives evidence that the total operating cost is $66,869,000, some $3,565,000 more than PLC-AMI.

(B1, FortisBC Application, Table 7.4.a - Gross AMI Capital and Operating Costs, p 116, line 4)

10. PLC-AMI, according to FortisBC's own application evidence, is 5.6% operationally cheaper. A further review of capital costs reveals that Meter Growth and Replacement costs are deemed to be the same no matter which technology is used - PLC-AMI or RF-AMI.

(B1, FortisBC Application,Table 7.3.a - Gross PLC Capital and Operating Costs , p 113, line 1 and Table 7.4.a - Gross AMI Capital and Operating Costs, p 116, line 4).

11. A comparison of IT Hardware, Licensing and Support Costs reveals that PLC-AMI is $46,000 cheaper than RF-AMI (Ibid). In fact the only significant area where PLC-AMI is deemed much more expensive is in project capital deployment costs, where the difference is

initially claimed to be $18,662,000 (Ibid). These cost figures are substantially verified in Table 7.5.a, though some $46,000 in capital difference disappears as compared to Tables 7.3a and 7.4.a (Ibid and p 119, line 2). The capital difference between the two technologies then jumps to $22,615,000 in Table 7.5.b, a figure that FortisBC relied upon in its IR Responses.

(B1, FortisBC Application, Table 7.5.b, p 120, between lines 2 and 3)

12. Consequently the Net Present Value (NPV) of Revenue Requirement Impact for PLC-AMI, while nearly $5,000,000 better than the status quo, is claimed to be $13,260,000 less than that for RF-AMI (Ibid, Table 7.5.c - Meter Reading Options-NPV of Revenue Requirements Impact, p 121, line 1). Subsequently a Comparative Yearly Rate Impact shows that the two technology types are barely distinguishable financially, except between 2014 to 2017 when PLC-AMI is fractionally more expensive (Ibid, Figure 7.5.b - Comparative Yearly Rate Impact, p 122, lines 1 and 2). And finally, a Comparative Cumulative Rate Impact finds that PLC-AMI, while providing a positive .63% rate impact, provides .36% less than RF-AMI.

(B1, FortisBC Application, Figure 7.5.c - Comparative Cumulative Rate Impact, p 122, lines 5 - 6)

13. FortisBC cannot engage in making cost comparisons in which it claims that their chosen technology is cheaper, and then, when their evidence is found wanting, change their mind and start arguing that it is impossible to do a proper cost comparison because they did not receive an RFP bid from a purveyor of that particular AMI technology.

14. Clearly any positive change in determined PLC-AMI capital deployment costs would alter the entire cost benefit analysis put forward in evidence by FortisBC. Order 30726 of the Idaho Public Utilities Commission states:

> *Staff recounted the improvements to the "AMI modules" since the Company's 2004 Phase One Implementation in McCall and Emmett. According to Staff, the cost of each individual AMI end-point has declined dramatically from $292 to $136. Id. at 5. The technology has also improved significantly, providing larger memory for more reliable data retrieval and expanded data collection bandwidth. Id.*
> (C13-17-1/ Idaho Power Company-CPCN Application AMI Installation, Order 30726, p. 6, para. 3)

15. Idaho Power Company Ltd, in its 2008 application before the Idaho Public Utilities Commission, provided a lengthy explanation of how it used a 2004 pilot deployment to

resolve *financial, technical and implementation problems.*

(C13-17-1, 5. Case No IPC-E-08-16, Application, p 3 , section 1, para 1 and pp 2 - 5, sections 1 - 5)

16. The Idaho Public Utilities Commission observed that, over time, Idaho Power Company Ltd was able to lower its AMI smart meter deployment costs. It is very common in the electronics industry, in fact in most industrial sectors, that as a product development matures and more of a particular product is sold, the price to manufacture it usually drops and thus the overall cost to a customer drops as well.

17. In contrast, FortisBC estimates that, for FortisAlberta deployment of PLC-AMI, costs should increase from $268 per meter to $478, and FortisBC and Itron estimate that it will cost approximately $574 per meter to deploy PLC-AMI in FortisBC's service area - some $18 above the estimated cost of BC Hydro deploying Itron's RF-AMI meters.

(B-6, IR#1, BCUC 106.5, Response, p 248, lines 8-21 and B-15, IR#2, BCUC 35.2, Response, p 74, line 27 - 75, line 6)

18. Previously FortisBC had stated that deployment of Itron's RF-AMI meters would be approximately $415 in its service area - $141 less than what it is costing BC Hydro, $316 if one did a straight comparison with FortisAlberta costs.

(B-6, BCUC IR#1 106.5, Response p 248, lines 8-21)

19. FortisBC and Itron's PLC-AMI cost analysis evidence and future estimates for PLC-AMI (leaving aside FortisAlberta deployment costs) go in the direction exactly opposite to the industry norm, the field testing experience of Idaho Power Company Ltd, and findings of the Idaho Public Utilities Commission.

20. In contrast, Courtney Waites, a pricing analyst for Idaho Power Company Ltd, gives a fairly comprehensive explanation of what costs are included in the company's AMI smart meter deployment, including tables with exact financial information, and also including, in Exh. 4, for example, a definitive cost estimate of deployment at $70,864,902 (p. 1, 54 of 480).

(C13-17-1, 3. Direct Testimony of Courtney Waites, p 1-11, Exh Nos. 4, 5 and 6)

21. Mark Heintzelman subsequently states that, post-deployment: *The total cost for meters, labor, backhaul and IT was about $74 M,* a 4.4% cost increase over the previous estimate.

(C13-18, Heintzelman to Shadrack, January 23, 2013)

22. In response FortisBC provides evidence from Pike Research in B23 that claims that Idaho Power's deployment cost per meter is in fact $197 per meter.

(B23, Attachment 1, Idaho Power, p 3 and 4, last and first paragraphs)

23. Idaho Power Company Ltd. provided a breakdown of the $94 million US Department of Energy project which consisted of twelve separate projects within three main categories: Advance Metering Infrastructure, Customer Systems, and Electric Infrastructure Improvements. Whether all twelve projects actually fell within the same exactly defined parameters that FortisBC is using for deployment of smart meters is hard to say. Nor is it clear whether FortisBC is claiming any electrical infrastructure improvements as part of its own smart meter deployment program. And there may be other areas where a cross-comparison does not match exactly.

(C13-30, Area D IR#1 BCSEA/SCBC 1.9, Response, (p 9 and 10 of 21)

24. However, at $47,700,000 for the original 115,000 customers, the cost of RF-AMI smart meter deployment for FortisBC is $414.78 per meter. For Idaho Power Company Ltd, however, even at $94 million for deployment of 485,000 meters, which replaced 500,000 electro-mechanical ones, costs were only $193.81 per meter.

(C13-18, Heintzelman to Shadrack, January 23rd, 2013 and C13-30, Area D IR#1 BCSEA/SCBC 1.9, Response, Smart Grid Frequently Asked Questions, 11 and 12, (p 9 and 10 of 21)

25. The cost of 115,000 FortisBC smart meters, if estimated at $193.81/meter, is $22,288,150. This estimate is $25,411,850 less in capital cost utilization than FortisBC's proposed Advance Metering Infrastructure CPCN application budget.

26. Even if aspects of the Idaho Power Company Ltd costs might be found lacking as directly comparable, FortisBC has been unable to date to explain or justify why its costs would

or should be 214% higher than Idaho Power's reported deployment costs. Thus Idaho Power has clearly developed a cost-price advantage in deploying smart meters that FortisBC cannot pass on to its customers if they insist on implementing their current application.

27. Area D further submits that deployment of a costlier RF-AMI system is also not in conformity with section 59, subsections 5(a) and 5(c) - noting, in terms of 5(a), that FortisAlberta was able to deploy its desired PLC-AMI technology for a lower price between 2008 and 2010 and, in terms of 5(c), that Idaho Power Company Ltd was able to deploy a different version of PLC-AMI for an even cheaper price as well between 2009 and 2011.

28. This cost comparison has been noted by local Chambers of Commerce, such as Kaslo and Area, which stated:

> *...we are very concerned that the above application is going forward without requiring that FortisBC provide an appropriate and verifiable wired option for consideration by the commission...the higher costs associated with the wireless option (estimated to be at least 7 million in our area alone) it would seem counterintuitive to not give serious consideration to a wired option. The fact that Fortis has utilized the wired option in Alberta only supports the need for consideration of this technology in rural BC.* (E-95)

29. The areas served by FortisBC and Idaho Power Company Ltd have much more in common in terms of geographic characteristics and population distribution than FortisBC has with BC Hydro

(C-30, IR#1 BCSEA-SCBC to RDCK, 1.1 Response, (p 2 of 21), paragraphs 2 to 7).

30. The vast majority of BC Hydro customers reside, and operate their businesses, in the southern Vancouver Island, Lower Mainland, and Fraser Valley areas, and in large interior cities such as Kamloops and Prince George, where forests, hills and mountainous terrain are not an issue.

31. Although BC Hydro does service remote and rural communities on its territory, its likely cheaper deployment costs in the larger, easy to reach urban centres will offset the costs of

deployment in remoter areas. Outside of Kelowna and Penticton, given the nature of its territory, FortisBC does not have that luxury.

32. In effect, and contrary to s. 59 of the *Utilities Commission Act*, FortisBC's application, if the proposed capital expenditures are allowed to proceed, will lead to unjust, unreasonable and unduly discriminatory rates which will place, for example, any lumber or pulp mill operating within the FortisBC service area at an unfair disadvantage with a lumber or pulp mill operating within Idaho Power Company Ltd's service area. This can be deduced by simply looking at the residential service charge, summer and winter and peak and off-peak tariff rates being charged as of January 1, 2012 by Idaho Power, as reported as part of the compliance filing under Order 30726 of the Idaho Public Utilities Commission and comparing it with current FortisBC residential rates.

> (C13-29, RDCK Response to BCSEA-SCBC I.R. No. 1 (2. Compliance filing of Time Variant Pricing Implementation Plan Case No. IPC-E-08-16, January 19, 2012 p. 2, para. 2 (p. 30 of 39))

33. FortisBC's current basic residential customer charge is $30.31 every two months, as compared to $5.00 per month at Idaho Power (Ibid). FortisBC's basic residential customer charge is $20.31 more every two months. Idaho Power's residential Summer Peak Rate was $0.1135 and Winter Peak $0.0822, whereas FortisBC's Block 1 rate is now $0.08803 (Ibid). Idaho Power's Summer Off Peak and Winter Off Peak was $0.062852. Idaho Power's Peak Winter Time of Use price per kWh is cheaper than FortisBC's lowest Inclining Block rate.

34. Allowing FortisBC to charge more for deploying smart meters than is absolutely necessary will place industries, commercial businesses, farmers, orchardists and wineries at an unfair economic disadvantage. Allowing any utility to continuously charge a higher rate increase than either the rate of inflation or the rate of GDP and/or GNP growth creates a long term economic disadvantage to the businesses operating in that service territory.

35. Given the proximity of Alberta and Idaho to the FortisBC service area, businesses operating in FortisBC's service area who are competing with businesses operating in the FortisAlberta and Idaho Power Company Ltd service areas are going to be placed at a distinct

financial disadvantage because of the unjustifiable rates that FortisBC will be obliged to charge to pay for the more expensive deployment costs of its chosen RF-AMI system.

36. Area D further submits that FortisBC should not be permitted to pass the unnecessary extra $25,411,850 capital cost of deploying its choice of meter along to its customers. Instead FortisBC should be required to absorb this capital cost and not be allowed any future consideration of this capital expenditure within the FortisBC rate structure. It is absolutely unacceptable to Area D that FortisBC should be allowed to encumber its customers with the difference.

37. In the 1980's the Devine Conservative government in Saskatchewan spent millions of dollars deploying natural gas into communities that were, by their very demographics, doomed to fade away. Those expenditures then became part of a huge legacy of debt because Mr Devine, an agricultural economist, got it so very wrong.

38. These are very tough economic times and it is against the public interest and contrary to ss. 45.8 and 59 of the BC *Utilities Commission Act* to allow FortisBC to increase the cost of electricity unnecessarily by asking its customers to pay $25,411,850 more for deployment of AMI than is absolutely necessary.

Technologies Compared

39. Although FortisBC concedes . . . *there may be less expensive PLC-equipped meters on the market* . . . than its chosen RF-AMI system, it then, however, goes on to describe PLC-AMI similarly to the way it did in its original application, which is to say, in terms of a primitive form of PLC system which has not been deployed for years:

> *...Since the collectors are housed in the substations, the cost of the PLC option is, in part, dependant upon the number of endpoints served per sub station...the distance between the metering endpoint and the substation determines how many line devices need to be installed upon distribution lines to ensure that the data can travel the required distance.*
>
> *Depending on the number of endpoints and the frequency of reading intervals, the amount of data travelling between the meters and the collectors can overwhelm the bandwidth of a PLC system. This becomes increasingly challenging once load control*

or pricing signal data is included for transmission through these same communication channels. The volume of data can impact the speed of transmission and can cause delays in getting the information back to the central computer in a timely fashion.
(B-1, 7.3, p 112, lines 1 - 3 and lines 4 -13; FortisBC Final Submission, p. 224, para. (i); pp. 225 - 226, para. (iv))

40. The Idaho Public Utilities Commission, however, has confirmed that previous problems of technical functionality were resolved by the time it issued its order in 2009:

The technology has also improved significantly, providing larger memory for more reliable data retrieval and expanded data collection bandwidth. Id Staff believes that *the Company has resolved the technological issues encountered during Phase One Implementation and justified its selection of AMI equipment. . .*
(C13-17-1, 5. Case No. IPC-E-08-16 Order 30726, Staff, p 6, para. 3).

41. This improvement in PLC-AMI technological functionality was explicitly described to the Commission by Idaho Public Utility Commission staff:

These modules also have larger memory, which helps ensure data retrieval. Hardware and software improvements expanded the data collection bandwidth and increase data retrieval success rates. Staff sees these improvements as evidence that the system will continually improve over time.

Staff had expected a system-wide rollout of the technology before now, but recognized the problem encountered in the Phase One Implementation associated with the Meter Data Management System (MDMS) component. Idaho Power sought to implement an MDMS system that had not yet been developed. The Company contracted with Itron to implement an existing system that it believed could be modified to suit its needs. Modifications did not lead to the system passing the Company's Validate, Estimate and Edit (VEE) acceptance criteria. These problems eventually were fixed when the Company was able to implement Version 5, Revision 11 in March of 2007. The software now has the specific functionality to support time-variant pricing, including critical-peak pricing.
(C13-17-1, Case No. IPC-E-08-16 Order 30726, Comments of Commission Staff, page 6, para. 1 and 2 ()).

42. Although FortisBC has stated:

FortisBC agrees that communication technologies will continue to evolve and that analysing the capabilities and economics of new technologies in response to business needs is a good method of determining what technologies should be employed and when they should be implemented.
(B-11, CEC IR#1, Response, p. 61, lines 21 - 25).

43. Some six years after Idaho Power resolved these technological issues FortisBC states:

..congestion can quickly become a problem on a PLC system when there are a significant number of endpoints, as additional data may not be available to transmit data during scheduled reading events. This, in turn, can negatively impact non-scheduled data requirements that require near real time endpoint resources, such as conservation voltage reduction and outage management. The PLC system may not have sufficient capacity to deal with concurrent scheduled and unscheduled transmissions. These bandwidth limitations have an important practical impact on functionality of AMI: it places a constraint on the total number of hourly customers that can be supported off each substation. Because of this, PLC systems often have challenges in supporting hourly consumption reads and supporting time-based billing (FortisBC Final Submission, p. 225, para. (iv).

44. The versatility of the PLC-AMI technology deployed by Idaho Power Company Ltd may be found in its statement that in 2012 it would begin offering Time Variant Pricing through an Energy Use Advising Tool to some 1,200 customers who had access to at least one year's hourly usage information data, including electric vehicle owners who chose to identify themselves.

(C13-29, RDCK Response to BCSEA-SCBC I.R. No. 1 (2. Compliance filing of Time Variant Pricing Implementation Plan Case No. IPC-E-08-16, January 19, 2012, p 1, para 1 and 2 and p 5, para. 5).

45. A detailed assessment of the technical functionality of Idaho Power Company Ltd's smart meter and smart grid deployment compares very favourably with FortisBC's requirements:

1.6 Please provide a comparison of the features of the Idaho Power Company's smart meters with those proposed by Fortis, using the format of Tables 3.2.2.a and Table 7.5.d of the AMI Application:

Summary of SMI Requirements

Category	Requirements of Smart Grid Regulation	Idaho Power Function
Meter	Measures electricity to eligible premises	Yes
	Transmits and receives information in digital form	Yes
	Enables remote disconnect and reconnect for residential premises	Available from Aclara
	Records Intervals at a frequency of at least 60 minutes (Aclara can go as low as every 15 minutes)	Yes
	Can be configured remotely or onsite	Yes

	Can measure and record electricity generated at a premises and supplied to the electric distribution system	Believe so
	Can transmit information to and from an IHD Idaho Power uses a web portal to give customers secure access to personal consumption information in choosing time variant pricing	Available
Installation	An advanced meter will be installed for each eligible premises	Yes
Installation (continued)	Secure hardware and software systems will be installed to: • Monitor, control and configure advanced meters and communications infrastructure • Store, validate, analyze and use the date measured by and received from advanced meters • Provide secure internet access for data about a customer's electricity consumption and generation, measured by the advanced meter • Bill customers in accordance with rates that encourage the shift of the use of electricity from periods of higher demand to periods of lower demand • Integrate with Idaho Power's systems	Yes Yes Yes Yes Yes
	Communications infrastructure includes a telecommunications network that is capable of delivering two-way, digital and secure communications	Yes
	Communications infrastructure must integrate to Idaho Power systems	Yes
Smart Grid Enablement	To enable Idaho Power to perform electricity balance analyses for the electrical distribution system	
	Enables Idaho Power to perform analyses to estimate the unmetered load	Yes
	Enables Idaho Power to use investigative device and/or software to identify the location of unmetered loads	Yes
	Establish a telecommunications network with sufficient speed and bandwidth to facilitate distributed generation	Yes
	Establish a telecommunications network with sufficient speed and bandwidth to facilitate the use of electric vehicles	Yes

	Integrate the operation of the smart grid with Idaho Power's systems	Yes

AMI Option Functionality Matrix Compared

Features Available	FortisBCAMI RF	Idaho Power PLC-AMI
Bi-Monthly Meter Readings	Yes	Assumed Available
Monthly Meter Readings for All Customers	Yes	Yes
Daily Meter Readings for All Customers	Yes	Yes
Hourly Meter Readings for All Customers	Yes	Yes
Reduction in Meter Reading Costs	Yes	Yes
Outage Notification	Yes	Yes
Restoration Verification	Yes	Yes
Flexible Billing Dates	Yes	Yes
Bill Consolidation for Customers	Yes	Yes
Home Area Network	Yes	No*
Meter Tamper Detection	Yes	Yes
System Modelling Enhancements	Yes	Yes
Time Based Rates	Yes	Yes
Virtual Disconnects	Yes	Available
Remote Disconnect	Yes	Available
Load Control	Yes	Yes
Conservation Voltage Reduction (VVO)	Yes	Believe so
Reduction in Energy Theft	Yes	Yes
Distribution Automation Device Support	Yes	Uncertain
Supports Energy Reduction Objectives	Yes	Yes
Only new equipment required when adding new customers will be the meter	No	Yes
Lower operation and maintenance cost of network	No	Yes
*Internet access to hourly customer power consumption data, with customer program to assist variant pricing choice	No	Yes
Irrigation peaks reward program	No	Yes

(C13-30, BCSEA-SCBC IR#1, Response to questions 1.5 and 1.6, (p 5 - 8 of 21)

46. The issues of bandwidth and high latency are dealt with by Aclara which states:

Strengths of the TWACS network are:

1) Surety of cost. The network equipment is installed in the substation and it communicates reliably everywhere the distribution circuits go.

2) Performance: We have customers with as many as 1.4 M [1.4 million] meters that have read these meters successfully for the past 3 years at the following performance rates:

a. Daily Consumption Reads – 99.72%
b. Hourly Interval Data – 99.65%
c. Billing Reads – 99.87%

3) Most of our customer have the original TWACS networks deployed. We recently introduced an enhancement to TWACS that we call eTWACS or TWACS 20. The original TWACS network would read meters serially on one phase of one feeder of a bus at a time. Today's eTWACS system is able to read meters on every phase, feeder and bus in parallel instead of serially. With eTWACS most utilities can read hourly interval data and daily/billing reads in under 4 hours and have the TWACS network available for Demand Response, Distribution Automation, Outage Management Support, Customer Service real time power and read checks, voltage checks, prepay, connect/disconnect, etc.

4) The key to TWACS is that we can read any single meter in under 15 seconds and we can get basic AMI data (hourly and daily reads) from all the meters in just a few hours. The competitors look at the TWACS fundamental signal below and say it's slow because it runs at the 60 Hz. The facts are that because every feeder and phase is a parallel communication node that supports 6 channels of data that the system is power, fast and reliable.
(C13-26, Appendix 1, Weber to Shadrack, February 7, 2013, p 10).

47. Idaho Power Company Ltd confirms that there are no bandwidth problems when it states:

Our largest substation serves just over 16,000 customers and we have not seen any issues related to data retrieval.
(C13-9, Appendix 1, Heintzelman to Shadrack, November 27, 2012, question and response to 11 p. 18)

48. Aclara also explains how the TWACS system has been upgraded since Idaho Power Company Ltd first deployed it in 2009:

Idaho Power's deployed TWACS hardware(substation equipment and meters) supports the eTWACS discussed in the attached announcement, but to date has not been utilized by Idaho Power because the head end software to support it was not available. That software has recently been released. eTWACS was tested and validated at Idaho Power. eTWACS provides the ability to collect data faster, leaving more network capacity to collect additional data (Voltage, smaller intervals - 15 Min vs. hourly, more intervals – multiple channels such as Voltage, support outage and restoration efforts and perform demand response).

As an example of Demand Response, Florida Power and Light has deployed the TWACS system only for Demand Response. They use it for peak shaving, economic benefit of not having to purchase expensive power off the grid at peak times and as a frequency response tool – shedding load in 18- 20 seconds is faster than starting additional generation to extinguish frequency variations due to load shifts.

...With TWACS-10 there is only 20-30% capacity left. With eTWACS, there is 70-80% capacity available. Both TWACS-10 and e-TWACS will read 99.7% of all requested data!
(C13-30-1, Weber to Shadrack, February 19, 2013, pp. 1 - 3).

49. The latter feature, used by Florida Power and Light, would be particularly useful to FortisBC, which faces the reality of increasingly having to purchase more and more expensive power off the grid at peak times.

50. With regard the issue of remote disconnect/connect, HAN and theft detection functionality were specifically addressed Although remote disconnect/connect technology is available from Aclara, GE and Landis+Gyr, Idaho Power Company Ltd chose not to use it. Likewise Idaho Power has chosen a different model provided by Aclara Technologies to interface with its customers on time variant pricing, and FortisBC agrees that "Blue Line", for example, can provide the same functionality as Zigbee without even being deployed in a smart meter. Theft detection functionality was also covered in deployment.

(C13-28, f, (f.i.F), p 5, lines 11 - 24, p 5, f, (f.i.G), p 5. line 25 - p 6, line 3, f, (f.i.H), p6, lines 4 -7, Appendix 1, Weber to Shadrack, February 11, 2013 and Appendix 2, Heintzelman to Shadrack, February 12, 2013; B-15, IR#2 Andy Shadrack, Q3 and Response, p 1, line 30 - p 3, line 7)

51. Idaho Public Utilities Commission Staff specifically confirm that two-way communications technology was available in 2004:

In addition to the PLC technology, substation and distribution systems will be equipped with communications equipment to send and receive data from the AMI meters. The AMI system proposed for deployment throughout the Company's service territory is identical to the system deployed in Phase One of AMI Implementation.
(C13-17-1, 4. Case No. IPC- E-08-016, Comments of Commission Staff, p. 7, para. 1)

52. Although FortisBC states... *the vast majority of* [PLC] *installations would be considered 1-way AMR functionality*, Aclara, the supplier whose equipment was used in Phase One of Idaho Power's AMI Implementation, had two-way communication capability by 2003, if not sooner and no less than 304 of their 361 deployments between 2003 and 2012 were PLC-AMI, not AMR.

(C13-26, Appendix 1, Weber to Shadrack, February 7, 2013, Response Q 1, p 11; and Final Argument, iii PLC, p 13, paragraph 31)

53. Fortis BC's evidence on technological capability of certain PLC-AMI technology is simply not credible.

54. The functionality issues that FortisBC raises about FortisAlberta's deployment of the Hunt PLC-AMI system simply do not exist for Idaho Power Company Ltd.

(B-14, FBC Response to BCUC IR#2, p. 66, 32.2.1, line 25; p. 67, line 26; C11-5, K. Miles IR#2, p. ??)

55. FortisBC is even contradicted by FortisAlberta's filing to the Alberta Energy and Utilities Board:

An AMI system supports many features beyond meter reads, including multi-utility applications (joint application to obtain meter reads from electric, gas and water meters), outage management, demand side management (time-of-use billing and critical peak pricing), voltage monitoring, and remote disconnection and reconnection of services. These features were not specifically tested in Phase I, although FortisAlberta has confirmed their existence and included them as part of contracted functional requirements of its AMI system.
(C11-5, K. Miles I.R. No. 2, Attachment, Fortis Alberta AMI Application, Appendix R, p. 24, para. 2)

56. FortisAlberta continues by stating that its evaluation selection process included:

- *Established manufacturing capability with mass production systems with support services able to deal with large projects;*
- *Scalability of network and data transmission management that can accommodate in*

excess of 2,000,000 meters;...
• AMI system operability does not interfere with existing distribution and transmission system operations;
• Ability to integrate with multiple AMI water and/or gas meters;...
• Proven functionality with reading resolution capable of hourly intervals, ensuring availability of potential future data requirements.
(C11-5, K. Miles I.R. No. 2, Attachment, Fortis Alberta AMI Application, Appendix R-1, p. 25)

57. With the exception of HAN function, the above quotes clearly contradict what FortisBC stated to the Commission about FortisAlberta's own deployment.

(B-14, FBC Response to BCUC IR#2, p. 66, 32.2.1, line 25; p. 67, line 26; and 11-5; 11-50)

58. FortisBC states that it and . . . *BC Hydro agreed that their AMI Solutions would include the ability to read gas and water meters* following its earlier claim which stated:

RF meters are also the only form of remote gas and water metering in North America, with over 50 million gas and approximately 50 million water RF AMR/AMI meters shipped in North American as of third-quarter 2012
(FortisBC Final Submission, 36(b)(ii), p 15; B-23, Attachment 1, p 1, para 6).

59. In contrast Aclara reports exactly how gas and water meter reads are integrated into its PLC-AMI system:

ATCO Electric [Edmonton, Alberta] *and several of the Municipal utilities deploy electric and water and/or gas meters. Aclara partners with Badger Meter who supplies their Orion module for the gas or water meters. The Orion module transmits the water or gas meter reads back to a receiver that is located under the glass of the electric meter. Those reads are then brought back over the power line via the TWACS network. Other utilities have deployed both our TWACS and STAR networks to read the electric(TWACS) and water or gas(STAR).*
(C13-26, Appendix 1, Weber to Shadrack, February 7, 2013, p. 12)

60. Mark Heintzelman's and Courtney Waites' direct testimony and accompanying exhibits provide clear evidence that when comparing FortisBC cost estimates with those of Idaho Power, PLC-AMI is simply cheaper because it uses no equipment between the substation and the meter.

61. FortisBC's argument that the same problems exist for all PLC-AMI deployments is

obviously not credible, nor are its claims that earlier AMI deployments by Aclara and Hunt were only one-way AMR and that neither company deployed meters after 2008.

(FortisBC Final Submissions, pp. 12-13, paras. 30-31).

62. It is unfortunate that the problems identified by Mr McLennan, given his experience of deploying Wi-Fi in heavily forested, hilly and mountainous terrain, could not have been explored more.

(C13-19, p 7 of 15, Para. 6 - 8 of 15, Para. 9).

63. Another concern is that BC Hydro's deployment of the same Itron meters that FortisBC wants to use is disrupting Wi-Fi services operating on the 900-928 band.

(C-30, BCSEA-SCBC Response to RDCK IR#1, p. 3, paras. 6 - 9)

64. Dr. Margaret Sears stated that Wi-Fi service providers are going out of business in Ontario and Quebec due to RF smart meter signal interference with their operational communications.

(T9 at p. 1850, lines 1-14; p. 1870, lines 3-6)

65. Finally, FortisBC's deployment figures are no more credible than its cost analysis of PLC-AMI. Using information found on the internet from Pike Research in the second quarter of 2012, FortisBC argues that PLC-AMI deployments represent only 4.7% of all known current and future AMI smart meter installations, whereas the 480,000 PLC-AMI meters deployed by FortisAlberta represent, in fact, 16.6% of the 2.9 million AMI meters reputed to have been installed in Canada, not 4.7% (Ibid).

(B23, Attachment 1, AMI Communications Technologies, p 1, para 1 - 3)

66. If 41.2 million meters have been installed in Canada and the United States, and Aclara and Hunt report selling 19 million units to 841 utility customers in North America, as well as elsewhere in the Americas, Asia, the Caribbean and the world, then Pike's claim that only 4.08 million PLC-AMI meters have been installed in Canada and the United States (North America includes Mexico) is not credible either. Aclara, for example, claims to have only

installed 12 systems outside Canada and the US.

(B23, Attachment 1, AMI Communications Technologies, p 1, para 1 - 3; and C13-26, Appendix 1, p 11, paragraph 1 w/list; 11-5, Attachment, Fortis Alberta, Advanced Metering Infrastructure (AMI) Application, Appendix R, Hunt Technologies, pp. 26-27)

67. FortisAlberta provides a map of all the locations in Canada and the US where Hunt has deployed some of the 6 million AMI meters it distributed to the 480 utilities it has for customers worldwide.

(B-14, FBC Response to BCUC IR#2, pp. 26-27, 32.2.1)

68. Furthermore, the PLC-AMI deployments in North America referred to above exclude installations by Cannon by Cooper Power Systems as there was simply not enough time to obtain that data.

(C13-26, Appendix 1, Question 3, Response, p 12)

69. Although FortisBC states that only 4.08 million PLC-AMI meters have been installed in Canada and the United States, just two companies, FortisAlberta and Idaho Power Company Ltd, installed 965,000, or 23.7% of them, between approximately 2008 and the end of 2011.

(B23, Attachment 1, AMI Communications Technologies, p. 1, para. 2)
C13-18, Heintzelman to Shadrack, January 23rd, 2013, 11-5, Attachments, Fortis Alberta, Advanced Metering Infrastructure (AMI) Application, p. 7)

70. Although FortisBC claims that virtually no PLC-AMI deployments took place after 2008, Aclara alone provides evidence that of 113 deployments by the company's customers after 1998, 31.3% occurred between 2008 and 2011. At 13 million units over 13 years, Aclara's price cost-point and technological innovation are proven. With 6 million units installed the same can be said for Hunt Technologies.

(C13-26, Appendix 1, Question 1, Response, p11; 11-5, Attachments, Fortis Alberta, Advanced Metering Infrastructure (AMI) Application, Appendix R, Hunt Technologies, p. 27)

71. There is no evidence of the number of PLC-AMI meters deployed by Itron worldwide, nor of how many RF-AMI meters Itron has deployed in North America or worldwide. Hunt's deployment map for Canada and the U.S. (and Cannon by Cooper deployments have not

been discussed at all) clearly contradicts FortisBC's assertions concerning the use of PLC-AMI.

(C11-5, Attachment, Fortis Alberta AMI Application, Appendix R, p. 27)

72. Area D respectfully submits that allowing FortisBC to deploy an RF-AMI system that is substantially more expensive, no more functional than PLC-AMI if not less so, susceptible to problems in heavily forested, hilly and mountainous rural terrain, has potentially adverse environmental and health consequences, and is considerably more controversial than a PLC-AMI system, does not properly serve the public interest in accordance with section 45(8) of the *Public Utilities Commission Act*.

The Argument on Health: Contract Science

73. Both the wireless industry and power utilities are obviously reluctant to recognize any possibility or probability of non-thermal biological health effects from low level EMF and EMR on humans and the environment, which was made very clear during cross examination of FortisBC's Health Panel by Chris Weafer, representative for the Commercial Energy Consumers' Association and the British Columbia Municipal Electric Utilities. Mr. Weafer was rebuffed five times for asking the FortisBC Health Panel if, since certain customers are afraid of potential health effects of EMF and EMR, FortisBC had considered discussing shielding with residential customers.

(T.3, p. 471, lines 14-17; p. 472, line 24; p. 473, line 5; p. 473, line 16; p. 474, line 1; p. 474, line 20; p. 475, line 4; p. 475, line 26; and p. 476, line 15)

74. Aversion to accepting non-thermal biological health effects even exists within the industry in consideration of the probability of non-thermal effects in, for example, an industrial accident in which safety limits were exceeded. John Orchitt, for example, applied for Workers Compensation on September 21, 1999 after being involved in an industrial accident involving overexposure to EMR on November 16, 1998. Over a subsequent three-year plus period Orchitt was evaluated by some seventeen medical and scientific professionals, the case not being finally settled until it had passed through an Alaskan Workers' Compensation Board tribunal, the Alaskan Superior Court on appeal and the Alaskan Supreme Court on appeal, nearly eight years after the original accident.

(*AT&T ALASCOM and Ward North America* v. *Orchitt; and the State of Alaska, Division of Workers Compensation*, July 6, 2007, No S-12058, Opinion No 6139 (Alaska Supreme Court)).

75. The same aversion to considering the possibility and/or probability of non-thermal biological health effects is contained in the Exponent Report's explicit and very critical evaluation and analysis of the Hardell *et al* studies.

(BI, Appendix C-5, p. 23, para 2 to p. 24, para. 1; T. 6, p.1101, line 22 to p.1108, line 14)

76. Exponent completely fails to provide any recognition of the potential for bias inherent in expert studies paid for by industry. Exponent fails to provide any recognition of the range of knowledge and experience possessed by the Hardell team, and fails to provide an honest assessment of the range of positive and negative reviews of the Hardell team's work. Exponent also completely fails to discuss any shortcomings in the Interphone group study. It is important to note that epidemiologists are generalists in the study of *developing or refining methods of measuring and evaluating disease occurrences,* whereas oncologists are physicians who specialize in the clinical treatment of cancer.

77. In contrast to the evidence of Exponent and Dr. Bailey, seven joint reviewers in a 2009 edition of the Journal of Clinical Oncology state:

> *Unlike the previous meta-analyses, however, we found significant associations between mobile phone use and risk of tumors in low-biased, case-control studies, which were mostly studies by Hardell et al, when performing subgroup analyses by use of blinding or the methodologic quality of studies. That is, the methodologic quality of study and blinding were strongly related to both the research group and the studies' findings. In particular, among the items of the NOS for assessing the quality of case-control studies, blinding and response rates between patient cases and controls were the major contributing factors to differentiate a high-quality study from a low-quality study. All seven studies by Hardell et al 7, 12, 14, 16, 18, 23 used blinding, and five of them showed no significant difference in response rates between patient cases and controls, whereas INTERPHONE-related studies and the other studies, except for the study by Stang et al, (10) did not use blinding and showed a significant difference in response rates.*
>
> *We feel the need to mention the funding sources for each research group because it is possible that these may have influenced the respective study designs and results. According to the acknowledgements that appeared in the publications, the Hardell et al group was supported by grants from the Swedish Work Environment Fund,*

Orebro Cancer Fund, Orebro University Hospital Cancer Fund, and so on. Most of the INTERPHONE-related studies were mainly supported by the Quality of Life and Management of Living Resources program of the European Union and the International Union Against Cancer; the International Union Against Cancer received funds for those studies from the Mobile Manufacturers Forum and the Global System for Mobile Communication Association
(C4-20, Seung-Kwon Myung, Woong Ju, Diana D.McDonnell, Yeon Ji Lee, Gene Kazinets, Chih-Tao Cheng and Joel M. Moskovitz, "Mobile Phone Use and Risk of Tumours: A Meta- Analysis", Journal of Clinical Oncology, Volume 27, Number 33, November 20, 2009, pp. 5570- 5571).

78. This paper cited 70 studies in all, 17 (24.3%) by Hardell and associates. In contrast to the weak negative inferences cited by Exponent, this scientific review provides a crisp and crystal clear review on the quality of the Hardell et al studies, and then goes on to disclose the independence of Hardell funding as compared to Interphone, the latter which has both cell phone manufacturer and cell phone communication companies funding the studies. The Stang and Hardell studies cited in the article are:

7. *Hardell L., Nasman A., Pahison A., et al: Use of cellular telephones and the risk for brain tumours: A case-control study. Int. J. Oncol 15:113-116,1999*
10. *Stang A., Anastassiou G., Ahrens W., et al: The possible role of radio frequency radiation in the development of uveal melanoma. Epidemiology 12:7-12, 2001*
12. *Hardell, L., Hallquist A., Mild K. H., et al: Cellular and cordless telephones and the risks for brain tumours. Eur. J. Cancer Prev. 11:377-386, 2002*
14. *Hardell L., Hallquist A., Hansson Mild K., et al: No association between the use of cellular or cordless telephones and salivary gland tumours. Occup. Environ. Med. 61:675-679, 2004*
16. *Hardell, L., Carlberg M., Hansson Mild K.: Case-control study on cellular and cordless telephones and the risk for acoustic neuroma or meningioma in patients diagnosed 2000-2003. Neuroepidemiology 25:120-128, 2005*
18. *Hardell L., Carlberg M., Hansson Mild K.: Case-control study of the association between the use of cellular and cordless telephones and malignant brain tumours diagnosed during 2000-2003, Environ. Res. 100:232-241, 2006*
23. *Hardell, L., Carlberg M., Ohlson C. G., et al: Use of cellular and cordless telephones and risk of testicular cancer, Int. J. Androl. 30:115-122, 2007)*

79. In the Orchitt case, Dr. Marvin Ziskin answered a question concerning the expert opinion of Dr. Martin Guy, a professor emeritus of electrical engineering who had done extensive work on the biological effects of EMR, as follows:

Q. Now as to the difference between the sort [] of doctor [] that you are compared to Dr. Guy, can you explain the differences for - so that we can understand the kind of testimonies that we can expect that you would be able to testify to accurately as

opposed to the type of testimony Dr. Guy would be able to testify to accurately?

A. Well, there is a great deal of overlap. However, I'll — I think he would defer to me when it comes to medical judgement and biology. And unless there was something very specific. I will always defer to him when it comes to the physical engineering side of things. And I think the same thing is true with — it's possible that, because he has done some biological research, that there could be something that I would not be correct on and he would maybe correct me when it comes to even biology or even medicine, but in general, he would defer to my opinion when it comes to medical aspects
(*AT&T ALASCOM and Ward North America* v. *Orchitt and the State of Alaska Division of Workers Compensation*, July 6, 2007, No S-12058, Opinion No 6139 (Alaska Supreme Court) at p. 15).

80. Clearly Dr. Ziskin, a professor of radiology and medical physics, knows the limitations of his expert opinion, how to define it, and where a potential cross-over with another expert might be, as well as how they might have complementary knowledge.

81. In contrast, Dr. Bailey acknowledged that he is neither a medical doctor nor has he had any clinical experience. He rarely, if ever, expressed the limits to his expertise, and could not accept that an oncologist might have specialist knowledge that an epidemiologist might not have. He never once acknowledged that Dr. Hardell was also an epidemiologist.

(T. 3 at pp. 484, line 23, to 485, line 5 and T. 6, pp.1102, line 18 to 1103, line 9; p. 1104, line 1; and p. 1107, line 6)

82. Dr. Bailey in fact shows a complete lack of respect for the field of environmental medicine. In contrast, Dr. Shkolnikov at least offers an explanation of his scientific concerns. Further, Dr. Shkolnikov clearly delineated the limits to his knowledge and expertise. Dr. Bailey did not.

(T6, p. 1086, line 21 to p. 1088, line 22; p.1089, line 22 to p. 1090, line 24)

83. Dr. Bailey is a very knowledgeable and experienced scientist, who vigorously defends his scientific opinion. A scientist with a well-honed opinion, however, is not necessarily useful as an expert in a proceeding. An expert witness should provide a proceeding with the range of opinion on the subjects under discussion and then explain, in his or her considered opinion, what appropriate conclusions may be drawn. Suggesting unanimity and/or consensus when

such clearly does not exist shows bias, and the weight of that evidence should be lessened by the Commission accordingly.

84. Dr. Bailey was in theoretical agreement as to the intent of a peer review, who was qualified to do it, and how this related to the quality of assessment of an expert review.

(T. 6, p. 1,067, lines 5 to 24)

85. An AAEM paper dated July 12, 2012 states:

> *Based on double-blinded, placebo controlled research in humans, medical conditions and disabilities that would more than likely benefit from avoiding electromagnetic and radiofrequency exposure include but are not limited to . . .*

and:

> *Based on numerous studies showing harmful biological effects from EMF and RF exposure, medical conditions and disabilities that would more than likely benefit from avoiding electromagnetic and radiofrequency exposure include but are not limited to . . .*
> (C11-6, Attachments, American Academy of Environmental Medicine Regarding Electromagnetic and Radiofrequency Exposure, July 12, 2012, p1, paras. 3 and 5)

86. Nowhere does this wording suggest that EMR or EMF are the cause of the diseases or illnesses described. Rather, the medical and clinical prescription is to avoid exposure by people already clinically ill and/or disabled.

87. In another paper, the A.A.E.M. stated:

> *The fact that RF exposure causes neurological damage has been documented repeatedly. Increased blood-brain barrier permeability and oxidative damage, which are associated with brain cancer and neurodegenerative diseases, have been found. Nittby* et al *demonstrated a statistically significant dose-response effect between non-thermal RF exposure and occurrence of albumin leak across the blood-brain barrier. Changes associated with degenerative neurological diseases such as Alzheimer's, Parkinson's and Amyotrophic Lateral Sclerosis (ALS) have been reported. Other neurological and cognitive disorders such as headaches, dizziness, tremors, decreased memory and attention, autonomic nervous system dysfunction, decreased reaction times, sleep disturbances and visual disruption have been reported to be statistically significant in multiple epidemiological studies with RF exposure occurring non-locally.*
> (C11-6, Attachments, American Academy of Environmental Medicine Electromagnetic and Radiofrequency Fields Effect on Human Health, April 12, 2012, p 3, para. 3).

88. Dr. Bailey's expert opinion on the preceding paragraph was as follows:

> *So I don't know how the writers of this document took two studies of* in vitro *observations on cells and then all of a sudden jumped to the conclusion that radio frequency fields were the cause of Alzheimer's, Parkinson's, and amyotrophic lateral sclerosis.*
> (T. 6, p. 1091, line 5 to p. 1092, lines 9-14).

89. Nowhere does the AEEM state that *RF exposure* is the cause of or even a co-cause of *Alzheimer's, Parkinson's* and *Amyotrophic Lateral Sclerosis (ALS)* and yet Dr. Bailey makes precisely that claim in an attempt to discredit the concern that the AEEM physicians and specialists are expressing.

90. Expert opinion must offer the full range of possibilities and probabilities and carefully explain why a certain outcome is likely, or unlikely, given all the variables in play. In contrast, Dr. Bailey consistently expressed the opinion that uniformity and consensus existed in the scientific community, when it was so very obvious from listening to the cross-examination of Citizens for Safe Technologies Society expert witnesses that that was not the case.

> (T. 3 at p 490, line 23; p. 491, line 4; p. 491 line 13; p. 492, line 21; p. 495 line 5; p. 498, line 22; p. 501, line 26; p. 502, line 5; p. 508 lines 5-22; p. 509, lines 6-14; p. 512, lines 12-19; p. 513, lines 10-21)

91. Dr. Bailey, unlike Dr. Ziskin, failed to draw clear delineation between science and the clinical practice of medicine, and failed to clearly delineate the limitations of his personal experience and knowledge.

92. The Italian Supreme Court agreed with the findings of the Court of Appeal of Brescia's court appointed expert witness, who, as had *Myung et al supra*, found serious problems with the Interphone group study as compared to work undertaken by the Hardell group. The Italian Supreme Court then went further and looked at the court appointed expert's scientific assessment of the studies of the International Commission for Non-ionizing Radiation Protection (ICNRP) and International Agency for Research on Cancer (IARC) in comparison with the Hardell group of studies.

> (*National Institute for Industrial Accidents* v. *Court of Appeal of Brescia*, October 12, 2012, Appeal No 11864-2010, Chron 17438.12 (Italian Supreme Court) at Trial

Proceedings, p. 4, paras. 2 to 3, p. 6, paras. 2 to 5; Reasons For Decision, pp. 8 to13)

93. Where Dr. Bailey and Exponent find consensus and unanimity among the scientific community, *Myung et al supra,* and the Italian Supreme Court, find a sharp divergence of opinion on the science and the probable outcomes related to exposure to EMF and EMR. Dr. Bailey continually justifies ICNRP and IARC on the basis of their status as government and WHO related bodies, whereas the Italian Supreme Court, through the review of a court appointed expert, looks beyond their international status (as Dr. Bailey previously claimed we should do) at the validity of their science, and finds it wanting.

94. In regard to Dr. Bailey's and Exponent's failure to acknowledge the range of opinion concerning the Hardell and similar studies, Area D respectfully submits that that omission brings into question the overall accuracy of the Exponent Report. Dr. Bailey and the Exponent Report have a bias to the exclusion of other equally valid scientific opinions, that Area D respectfully asks the Commission to consider when weighing Exponent's opinions.

95. The history of our world in the twentieth century is replete with instances of products initially thought safe, such as DDT, Thalidomide, asbestos, cigarettes, etc, which were heavily promoted by industry and so became ubiquitous before being recognized as deadly. It was due to these mistakes that the concept of the need to adopt a precautionary principle before introducing new technologies was developed.

96. Although Dr. Bailey, Exponent, and FortisBC vigorously maintain that there is no probability of non-thermal biological health effects from EMF and EMR, Workers' Compensation tribunals, courts (especially on appeal) and governments are acting on evidence of such probability in Italy, Australia, Sweden, Spain, the Netherlands, Belgium and France, to name just a few countries which acknowledge that persons with a perceived electro-hypersensitivity are to some extent disabled and need to be accommodated, even in the absence of scientific proof.

Re-Framing the Argument on Health; Contract Science v. Clinical Practice

97. Area D wishes to emphasize in the strongest possible terms that no one on the

FortisBC Health and Environment panel was qualified as a medical doctor. Consequently no one had any clinical experience dealing with persons facing health challenges from EMF and EMR emissions, or the expertise to appropriately deal with the issue of how to treat persons with sensitivities and/or hypersensitivities.

98. EMF and EMR sensitivity describes persons with an often multi-faceted illness that ranges from acute, requiring hospitalization, to ongoing chronic, often leaving the patient unable to work and financially unable to support themselves. Area D submits that critiquing the scientific basis of the disability and its symptoms fails to come to grips with the very real and practical problem which physicians face in having to treat people presenting themselves with EHS symptoms.

99. Dr. Sears described the situation:

> *. . . The individual finds that their symptoms occur with an exposure, and that when that exposure is removed they get better, and that when they re-challenge themselves they experience the same symptoms. So it's not a question of, oh, this happened once. It's a question of every time I go to this particular location where there is a high level of WiFi, or every time I use this device, and in between I go away to my cottage and I'm fine, or I turn off this device and I'm fine. So it's a lot stronger than simply, "oh, I think that it's this".*
>
> *And so the physician first of all has ruled out other possibilities, and then it's a repeatable phenomenon that you get these symptoms in association with the exposure. The Austrian doctors also say that along with that there is a suite of biochemical markers, and then we have animals' evidence that there are a lot of stressed proteins, and then we also have the* in vitro *evidence. And so it's not simply one - you know, there isn't just one piece, but it's putting together the entire fleet of what we know about biochemistry and all the way up to the patient's experience. The other one comment I would make in terms of self-reports is that a huge amount of medicine is based on self-reports. Pain is based on self-report. Psychiatry, psychology, all of that is based on self-report. There's a huge amount of medicine that is self-report. So saying that shouldn't be used as something to kind of minimize this type of assessment.*
>
> *...I'm talking about the clinical practice. I'm not talking about the research study. This is the way that the doctors in Toronto and in Ottawa are dealing with people who are self-reporting that they are unwell. And the typical experience is that these people may have other sensitivities as well, which is one of the things that makes the research into electromagnetic sensitivity quite difficult because it may not be the only sensitivity that these people are experiencing at that time.*

...Actually, when they first present to the doctors they may fall into the kind of description or category that you have indicated. But some of these people actually become very, very healthy. They're very high functioning. But they simply can't tolerate certain environments. So long as they are kept - they keep themselves a good diet and avoid the types of exposures that give them problems, they can be very healthy, very strong. They can be very, very high functioning.
(T9, p. 1824, line 5 to p. 1825, line 9; p. 1836, lines 13 to 23; and, p. 1837, lines 11 to 20).

100. The WHO states, in concluding their policy document on Electromagnetic Hypersensitivity Syndrome (EHS):

EHS is characterized by a variety of non-specific symptoms that differ from individual to individual. The symptoms are certainly real and can vary widely in their severity. Whatever its case, EHS can be a disabling problem for the affected individual. EHS has no clear diagnostic criteria and there is no scientific basis to link EHS symptoms to EMF exposure. Further, EHS is not a medical diagnosis, nor is it clear that it represents a single problem.

. . . Physicians: . . . Treatment should aim to establish an effective physician-patient relationship, help develop strategies for coping with the situation and encourage patients to return to work and lead a normal social life.
(B-151-1, Attachment BCH 2.6, p. 3, para. 1 and 5)

101. BC Southern Interior MP Alex Atamanenko read a letter from an EHS sufferer which described the situation from the patient's point of view.

(T5, p. 1007, line 17 to p. 1010, line 18)

102. Dr. Bailey was asked, during cross-examination, in relation to a paper by the American Academy of Environmental Medicine (AAEM) in C11-6, if it represented:

. . . a reasoned argument by a group of physicians who work in the field of medicine. If you look at both papers, would you agree that what they're saying is "We're treating more and more people who say they have this sensitivity"?
Dr. Bailey: A: I get -- I understand that from that document, yes
Mr Shadrack: Q: And in that sense would you concur that they're following the WHO document from 2005?
Dr. Bailey: A: In providing treatment to their patients, I assume that they are.
Mr Shadrack: Q: Would you agree that they are trying to help those patients live in the world and try to live as normal a life as possible, given the condition?
Dr. Bailey: A: I would assume so.
(T6, p. 1083, line 25 to p.1084, line 15)

103. The American Academy of Environmental Medicine (AAEM) recommends:

> *Because Smart Meters produce radiofrequency emissions, it is recommended that patients within the above conditions and disabilities be accommodated to protect their health. The AAEM recommends: that no Smart Meters be on these patients' homes, that Smart Meters be removed within a reasonable distance of patients' homes depending on the patients' perception and/or symptoms, and that no collection meters be placed near patients' homes depending on patients' perception and/or symptoms.*
> (C11-6, Attachments, American Academy of Environmental Medicine Regarding Electromagnetic and Radiofrequency Exposure, July 12, 2012, p 2, para. 1)

104. Dr. Bailey was very disparaging of the AEEM physicians, and others, including the well known environmental medical specialist, Dr. Ray, dismissing them as:

> *. . . a couple of individuals can put together a two page memorandum and put it out in the press, and put a dozen or 20 citations to it.*
> (T3, p. 496, lines 17 -19)

105. Curiously enough, however, an item relevant to this issue comes from two authors of the Exponent Report, Drs. Bailey and Erdreich, who, in 2007, wrote a paper (not cited in the FortisBC report) in the Journal Health Physics entitled *Accounting for Human Variability and Sensitivity in Setting Standards for Electro-Magnetic Fields,* and which was presented by them to a conference of the International Commission on Non-ionizing Radiation Protection, in Berlin, March 2006, and about which its abstract states:

> *. . . biological sensitivity and variability are key issues for risk assessment and standard setting. Variability encompasses general inter-individual variations in population responses while sensitivity relates to unusual or extreme responses based on genetic, congenital, medical or environmental conditions. For risk assessment and standard-setting, these factors affect estimates of the thresholds for efforts and dose response relationships and inform to protect the more sensitive members of the population, not just the typical and average.*
> (T6, p.1069, line 8 to p.1070, line 4)

106. Dr. Bailey's evidence and testimony on the issue of patient safety needs to be weighed against the fact that he is neither a physician nor a clinician who has dealt with patients with electro-hypersensitivity. Nowhere did this become more clear than during the cross examination of Dr. Bailey by Mr Andrews, in which Dr. Bailey suggests that one way to resolve

the scientific argument around EHS is to increase the intensity of exposure in those claiming to be sensitive.

(T4, p. 564, line 17 to p. 565, line 5 to p. 566, line 14)

107. One comes away from reading Dr. Bailey's answers feeling that Dr. Bailey views patients as he would rats in a lab, whereas Dr. Sears shows obvious knowledge and experience of the clinical medical conditions that surround patients afflicted with EHS. On a personal note, the representative for Area D wishes to simply add that, as someone who has himself lived with a spouse suffering from a chronic environmental illness for the last twenty-four years, he can certainly identify through experience with what Dr. Sears is saying. The issue remains what to do with persons whom physicians are treating and whom physicians and/or environmental medicine specialists say should avoid exposure, even low frequency exposure.

108. Scientific certainty and risk analysis perception for which Dr. Bailey is qualified to offer an opinion is not the issue here. Dr. Bailey is simply not qualified to make judgments about the medical and clinical portions of the two AAEM papers, especially in view of the fact that he failed to explain the limitations to his expertise around medical and clinical matters. Dr. Bailey was far too quick to dismiss the opinion of AAEM without explaining the respective roles that he plays as a scientist as compared to the role played by physicians who have to treat patients presenting themselves with symptoms now commonly called Electro Hypersensitivity Syndrome (EHS).

(T3, p. 496, lines 17 to 24)

109. Area D further submits that Dr. Bailey's stated positions are contrary to the guidance given specifically to physicians by the WHO in 2005:

- *a medical evaluation to identify and treat any specific conditions that may be responsible for the symptoms.*
- *a psychological evaluation to identify alternative psychiatric/psychological conditions that may be responsible for the symptoms.*
- *an assessment of the workplace and home for factors that might contribute to the presented symptoms. These could include indoor air pollution, excessive noise, poor lighting (flickering light) or ergonomic factors. A reduction of stress and other*

improvements in the work situation might be appropriate.
...Treatment should aim to establish an effective physician-patient relationship, help develop strategies for coping with the situation and encourage patients to return to work and lead a normal social life.
(B-15-1, Attachment BCH 2.6, p. 3, paras. 3 and 5)

110. As undeniably demonstrated by Dr. Sear's evidence, unlike Dr. Bailey's prescriptive science-based reasoning and risk analysis, medical doctors and clinical specialists are constantly faced with treating patients who present with illnesses and symptoms for which that doctor, family physician, and those clinical specialists do not have definitive answers as to the causes or origins, but which appear to be related, and, on an individual case basis, can be directly correlated to EMF and EMR exposure. And those physicians are prescribing that those patients avoid such exposure.

The Necessity of Accommodating Customers with EMR and EMF Sensitivities

111. The fact that a physician may specifically recommend and prescribe, for a patient diagnosed with a sensitivity or hypersensitivity to EMF and EMR as an environmental illness, elimination or severe restriction of exposure to low frequency EMF and EMR as part of the treatment regimen for their condition is a point which seems to have been completely lost on FortisBC:

Mr. Shadrack: Q: So I'm to understand if someone brought a letter from a doctor saying I have a health condition, you wouldn't agree that that was an extenuating circumstance. And I'm asking this specifically in relation to someone like Ms Nicolas for example.
Mr. Loski: A: The short answer is that's correct. Based on what we're proposing, there's no opt-out for any reason.
(T 6, p. 1058, lines 19 -26 to p. 1059, line 1)

which Mr Loski later makes absolutely clear:

. . . our application is that there will be no opt-out for any reason including health reasons, so just make that clarification as it related to extenuating circumstances.
(T6, p. 1062, lines 22-25)

112. As stated in FortisBC's application:

After three months of refusal to provide access to exchange the meter, and in absence of extenuating circumstances, suspension of the customer's service until the advanced meter is installed.
(B1, 8.5, Customer Refusals and Opt-Out , p. 142, line 21 - 23)

113. In an appeal of a decision of the Alberta Human Rights Commissioner, Burrows B. stated:

> *In my view the Chief Commissioner gave inappropriate emphasis to the fact that the doctors who assessed Ms. Brewer's symptoms were unable to diagnose her condition. A distinction should be drawn between the question of whether a disability exists and the question of whether medical science has a label for it or has determined its cause.*

and further:

> *There may be a question as to whether Ms. Brewer's symptoms amount to a physical disability but the inability of doctors to put a label on the symptoms or to identify the cause of the condition (as opposed to the triggers of the symptoms) does not answer that question. The definition of "physical disability" in the Act does not exclude infirmities caused by illnesses which medical science does not yet fully understand.*
> *(Brewer* v. *Fraser Milner Casgrain LLP,* 2006 ABQB (CanLII) at paras. 29 & 32 (rev'd on other grounds 2008 ABCA 435 (CanLII))

114. S. 7 of the Canadian Charter of Rights and Freedoms states:

> *Everyone has the right to life, liberty and security of the person and the right not to be deprived thereof except in accordance with the principles of fundamental justice.*

115. Area D submits that FortisBC's proposal to wantonly and deliberately expose its EMF and EMR sensitive customers to electromagnetic and radio frequencies detrimental to their health, and without even the slightest concession to due process in connection with that assault, is a clear and undeniable violation of those customers' s. 7 right under the *Charter* to security of the person. S. 15 of Charter further states:

> *Every individual is equal before and under the law and has the right to the equal protection and equal benefit of the law without discrimination and, in particular, without discrimination based on...mental or physical disability.*

116. A report commissioned by the Canadian Human Rights Commission has stated:

> *Individuals with environmental sensitivities experience adverse reactions to environmental agents that are prevalent throughout the built environment and include electromagnetic fields . . .*

and

> *While this paper uses the term "environmental sensitivities", numerous other terms refer to the same or similar conditions, including "multiple chemical sensitivity (MCS)",*

"chemical injury", "sick building syndrome", "environmental illness", "environmental hypersensitivity", "electromagnetic field (EMF) sensitivity" . . .

and that report made, among others, the following recommendations:

1: Where an individual with a poorly understood disability is unable to provide expert medical evidence, the employer, service provider or other decision maker should seek an informed expert opinion on the effects of the condition and the resulting accommodation needs.

2: Employers, service providers and other decision makers should ensure that, if accommodation requests are rejected, it is not because the medical evidence provided is not as unequivocal as it may be with other disabilities: knowledge and understanding of the condition is still developing, and expectations regarding medical evidence should reflect this.
(C. Wilkie and D. Baker, "Accommodation for Environmental Sensitivities: Legal Perspective" (Ottawa: Canadian Human Rights Commission, 2007) at pp. 3, 4, & 8)

117. The Canadian Human Rights Commission subsequently adopted the following policy which reads, in part:

Individuals with environmental sensitivities experience a variety of adverse reactions to environmental agents at concentrations well below those that might affect the "average person". This medical condition is a disability and those living with environmental sensitivities are entitled to the protection of the Canadian Human Rights Act, which prohibits discrimination on the basis of disability. The Canadian Human Rights Commission will receive any inquiry and process any complaint from any person who believes that he or she has been discriminated against because of an environmental sensitivity. Like others with a disability, those with environmental sensitivities are required by law to be accommodated.

The CHRC encourages employers and service providers to proactively address issues of accommodation by ensuring that their workplaces and facilities are accessible for persons with a wide range of disabilities . . . .

(Canadian Human Rights Commission, "Policy on Environmental Sensitivities" (Ottawa: June 15, 2007)
http://www.chrc-ccdp.ca/legislation_policies/policy_environ_politique-eng.aspx)

118. Canadians currently receive disability pensions for environmental sensitivities, including sensitivity to EMF and EMR, based on the diagnostic opinion of medical physician specialists in the emerging field of environmental medicine.

119. FortisBC, however, proposes no accommodation whatsoever and completely denies any right of due process to a customer with health challenges related to EMF and EMR

emissions. After ninety days if the customer refuses to use the option to relocate the meter, FortisBC reserves the right to immediately disconnect the service, whether a family physician and/or environmental health specialist recommends avoidance of low frequency emissions or not, and whether or not that person is on a disability pension due to those sensitivities.

120. Area D submits that this situation is different from upgrading a power line or dealing with the location of a cell phone tower. Up to the point of FortisBC attaching one of these meters to the property owner's own meter base attached to their own home, an electro-hypersensitive individual could make an effort to live away from high-tension power transmission lines and cell phone towers and thus somewhat protect themselves from exposure to EMF and EMR. With the potential mandatory installation of RF-AMI smart meters proposed by FortisBC however, that person has nowhere to go to escape this type of exposure.

121. Area D submits that the testimony of Mr Warren and Mr Loski on this subject should be severely discounted as neither of them have any credentials as medical doctors and/or clinical experience, by which they can comment on how a physician should recommend treatment for a patient with electro-hypersensitivity.

122. FortisBC is obviously taking an inflexible, absolutist position which in effect says that since scientific proof of biological health effects on humans and the environment may not yet be conclusive, no precautionary principle should be used in dealing with customer concerns. As a consequence, FortisBC has created a huge divide, a chasm, between itself and those of its customers who do believe that there are health consequences.

123. FortisBC's offer to "*continue productive dialogue*" with a customer who refuses deployment of an RF-AMI smart meter on grounds that they are electro-hypersensitive is not constructive. In fact it is quite stressful to someone who is ranging from being acutely ill to chronically ill, especially when there is the added threat that access to electricity will be cut off after 90 days.

If FortisBC's Application is Approved, an Opt-Out Provision Must Be Included

124. The question must be asked if it is appropriate for FortisBC to confront customers who will be as adamant about not installing an RF smart meter on their property as 85,000 customers of BC Hydro have been, and whether it is fair and reasonable, through the granting of FortisBC's application, to, in effect, forcibly compel FortisBC customers to accept deployment of an RF smart meter on their property.

125. Does a customer opting out jeopardize the RF smart meter system? FortisBC has not stated what percentage of customers it expects likely to wish to opt-out. FortisBC has discussed the question of cost of having to read certain customers' meters, but that issue can in part be alleviated by allowing certain customers to read the meter themselves and phone it in to a self-activated portal, as does Area D's representative's 70 year old brother in the UK.

126. FortisBC has argued that an opt-out provision flies in the face of BC's *Clean Energy Act*, but nowhere does this Act require that each and every customer be compelled to accept installation of an RF smart meter on their property.

127. A customer who previously agreed to deployment of an electro-mechanical meter as part of a service agreement, cannot, Area D submits, be compelled to accept deployment of a meter that that customer believes is detrimental to their health, something which was never contemplated in the original contract.

128. If a FortisBC customer has scrupulously avoided the myriad of wireless devices available, does not own a cell phone or have Wi-Fi, should the Commission give FortisBC the right to forcibly compel that customer to accept deployment of an RF smart meter, attached to their own house, next to their own bedroom ?

129. No company that has a monopoly of service should have the right to enter a person's property and deploy a piece of equipment which the person believes is detrimental to their health, in violation of their right to personal space and privacy. Unless and until FortisBC agrees to allow another electrical service provider to come onto its service territory and

provide customers with an alternate AMI option, FortisBC should be compelled to accept an opt-out provision.

130. The right to protect oneself from a perceived health risk in a free and democratic society is not one that should be taken away lightly. FortisBC should not be granted a right that few if any corporations are granted in BC - the right to compel a customer to use a certain product against their will, a product that the customer believes is harmful to their health.

131. In a society where so many consumer products have later been found to be detrimental to customers' health and safety, Area D simply asks: what is going to happen at a later date if health and safety problems arise and certain customers were compelled to accept this product on their property? What if RF smart meters are another urea formaldehyde? What if installation of urea formaldehyde had been mandatory and had been installed over property owners' objections? The problem would have been incalculably worse, harder to rectify, and would have involved incalculably higher liability.

132. FortisBC has within its power the ability to ameliorate a customer's concerns and has thus far chosen not to do so. FortisBC, having vociferously argued that it, as a corporation, has the right to choose which technology it deploys to effect installation of RF-AMI smart meters, cannot then argue that its customers should not also have the same right to choose.

Conclusion

133. While Area D supports the broad objectives of the *Clean Energy Act* and deployment of advanced metering in principle, it cannot support FortisBC's application for a Certificate of Public Convenience for its Advanced Metering Project in its current form.

134. Area D respectfully submits:

A) That the Commission dismiss FortisBC's application with the proviso that FortisBC be free to make another application based upon a thorough and unbiased "request for a proposal" (RFP) and bidding process which includes consideration of all available PLC-AMI alternatives.

B) In the alternative, in the event that FortisBC's application is approved, that, in accordance with section 45.9(b) of the BC *Utilities Commission Act*, such approval be granted only on the conditions that:

(a) FortisBC be required to bear the full extra cost of deploying its chosen technology, namely that the full amount by which the cost of FortisBC's proposal exceeds that of a PLC-AMI alternative be the sole financial responsibility of FortisBC and its shareholders, and that those extra capital and operational costs never be borne directly or indirectly by any FortisBC customer;

(b) in accordance with section 45.9(b) of the BC *Utilities Commission Act*, the Commission require FortisBC to resolve all technological compatibility issues with any and all Wi-Fi services and any other communication media (such as ham radios) prior to beginning any deployment of AMI meters and/or adjunct collection equipment on its service territory;

(c) FortisBC, prior to deployment of any AMI equipment, develop and provide the Commission with a very clear policy governing how FortisBC will deal with persons with medical conditions, hypersensitivities, and medical or other devices sensitive to or affected by low electromagnetic exposures, including a compensation plan for anyone who acquires a condition following installation of a wireless meter;

(d) the Commission order FortisBC to develop a general opt-out provision to wireless AMI deployment, and that such opt-out provision shall take into account any such customers':

i. diagnosed medical conditions and dependence on devices such as pacemakers that may be affected by electromagnetic or radio frequency exposure;

ii. diagnosed sensitivity and/or hypersensitivity to low electromagnetic or radio frequency exposure;

iii. financial means to move the meter base away from their home and/or beyond their property boundary.

All of which is respectfully submitted,

Andy Shadrack
Director Area D
Regional District Central Kootenay

AT&T ALASCOM and Ward North America v. *Orchitt; and the State of Alaska, Division of Workers Compensation*, July 6, 2007, No S-12058, Opinion No 6139 (Alaska Supreme Court

National Institute for Industrial Accidents v. *Court of Appeal of Brescia*, October 12, 2012, Appeal No 11864-2010, Chron 17438.12 (Italian Supreme Court) at Trial Proceedings

Brewer v. *Fraser Milner Casgrain LLP*, 2006 ABQB (CanLII) at paras. 29 & 32 (rev'd on other grounds 2008 ABCA 435 (CanLII)

C. Wilkie and D. Baker, "Accommodation for Environmental Sensitivities: Legal Perspective" (Ottawa: Canadian Human Rights Commission, 2007)

Canadian Human Rights Commission, "Policy on Environmental Sensitivities" (Ottawa: June 15, 2007)
http://www.chrc-ccdp.ca/legislation_policies/policy_environ_politique-eng.aspx)

THE SUPREME COURT OF THE STATE OF ALASKA

AT&T ALASCOM and WARD NORTH AMERICA, INC.,	)	Supreme Court No. S-12058
Appellants,	)	Superior Court No. 3AN-03-8276 CI
v.	)	OPINION
JOHN ORCHITT; and THE STATE OF ALASKA, DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT, DIVISION OF WORKERS' COMPENSATION,	)	No. 6139 - July 6, 2007
Appellees.	)	

Appeal from the Superior Court of the State of Alaska, Third Judicial District, Anchorage, Philip R. Volland, Judge.

Appearances: Trena L. Heikes, Anchorage, for Appellants. Steven J. Priddle, Law Office of Steven J. Priddle, Anchorage, for Appellee John Orchitt. Larry A. McKinstry, Assistant Attorney General, Anchorage, and David W. Márquez, Attorney General, Juneau, for Appellee Alaska Workers' Compensation Board.

Before: Fabe, Chief Justice, Matthews, Eastaugh, Bryner, and Carpeneti, Justices.

EASTAUGH, Justice.

I. INTRODUCTION

John Orchitt was exposed to radio frequency radiation in an accident while he worked for AT&T Alascom. After a contested hearing, the Alaska Workers' Compensation Board awarded him temporary total disability and medical benefits. AT&T unsuccessfully appealed to the superior court, alleging that procedural irregularities deprived it of due process and that the board's decision was not supported by competent scientific evidence. Because substantial evidence supports the board's findings and because the board's procedural decisions did not deprive AT&T of due process, we affirm the superior court's judgment that affirmed the board's ruling.

II. FACTS AND PROCEEDINGS

John Orchitt applied for workers' compensation benefits on September 21, 1999, claiming he had suffered head, brain, and upper body injuries as a result of overexposure to radio frequency radiation on November 16, 1998. AT&T Alascom controverted his claim on October 14, 1999. We derive the facts in this case from the workers' compensation file and hearing record.

Orchitt began working for AT&T Alascom in 1991, after serving in the Air Force for more than twenty years.[1] He worked primarily as a telecommunications equipment installer technician.

On November 16, 1998, Orchitt and his coworker, Tim Sorenson, were installing a new computer-operated switching system in the Eagle River Earth Station. They had to replumb sections of waveguide as part of the installation process.[2] To

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[1] We refer to AT&T Alascom and its insurer, Ward North America, Inc., collectively as "AT&T."

[2] A waveguide is part of a transmission system for microwaves. It guides radio frequency waves along the path they take from one point to another. The (continued...)

prevent them from being exposed to radio frequency radiation, the amplifier associated with the waveguide they were working on was supposed to be turned off.

After a technician from the Eagle River Earth Station turned off an amplifier in accordance with the specifications provided, Orchitt separated two segments of the waveguide. He estimated that his head was from nine to fifteen inches away from the waveguide's point of separation. While Orchitt was working on the waveguide, Sorenson walked around the room with a meter and probe to detect any radio frequency radiation. The meter Sorenson used had three scales. A full-scale reading on the highest scale could indicate the presence of three times the American National Standards Institute (ANSI) limit for whole body exposure. Sorenson calibrated the meter outside the room. After he reentered the room, the meter "pegged," indicating that there was radio frequency radiation in the room. "Pegged" means the meter registered at its highest level. Sorenson changed the scale while he was in the room, but the meter continued to peg. Realizing there was a problem, Orchitt clamped the two pieces of the waveguide together to stop the radiation from leaking any further. Orchitt and Sorenson then discovered that the amplifier connected to the waveguide had not been turned off because the engineer had misidentified which amplifier was associated with the waveguide they were working on. Orchitt contacted the engineer and tried to contact his supervisor to tell them about the accident; his supervisor was not in, so he contacted the manager instead. The radio frequency radiation Orchitt was exposed to had a frequency of six gigahertz;[3] the amplifier transmitting radio frequency radiation through the waveguide

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[2] (...continued)
waveguide in this case consisted of rigid, hollow, rectangular pieces of metal with flanges on both ends. Segments of waveguide were connected at their flanges by bolts.

[3] A hertz is a unit of measurement. It equals the number of cycles of a wave (continued...)

was operating at approximately ninety watts. Orchitt estimated that he was exposed to radio frequency radiation for three to six minutes.

Sorenson testified that Orchitt said he felt a "heat flash." Sorenson did not observe any redness on Orchitt's face at that time. Orchitt filed a report of injury on December 14, indicating that his head and eyes had been exposed to radiation. He continued to work as an installer for AT&T for about three months following the accident; some of his work was overtime.

Radio frequency radiation is non-ionizing radiation, unlike the radiation from x-rays. The primary biological effect of radio frequency radiation is heating. Ionizing radiation, in contrast, has sufficient energy to break molecular bonds within the body. Radio frequency radiation encompasses a number of frequencies, including the frequencies for television, radio broadcasting, and telecommunications. The term "microwave radiation" refers to a region within the radio frequency radiation band. The frequency of microwave radiation is usually above one gigahertz, or one billion cycles per second. Different frequencies of radio frequency radiation have differing abilities to penetrate tissue. Frequency and wavelength are related, so that longer waves have lower frequencies. Longer waves have greater penetration. Six gigahertz waves penetrate to approximately eight millimeters. When the waves reach this depth, they have lost approximately eighty-five percent of their energy.

Safety standards for exposure to radio frequency radiation vary according to the frequency involved. There are two ways to calculate exposure to radio frequency radiation. One way is to calculate the actual exposure level in milliwatts per square

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[3] (...continued)
that pass through a given point in a one-second period. Six gigahertz means that six billion cycles of the wave pass through a point in one second.

centimeter; the second way measures tissue absorption of radio frequency radiation in watts per kilogram. The Federal Communications Commission (FCC) has set standards both for general public exposure and for occupational exposure. Two experts who testified in Orchitt's case and the board used the FCC occupational standard for actual exposure to evaluate whether he was overexposed to radio frequency radiation. The FCC occupational standard for actual exposure at six gigahertz is five milliwatts per square centimeter over a six-minute interval for whole body exposure.[4]

Orchitt's first medical visit after the exposure was an appointment with his family clinic on November 30, 1998. Orchitt was concerned about headache and eye pain after the exposure but thought he had a sinus infection. The doctor he saw referred Orchitt to an optometrist for follow up. The optometrist found nothing wrong but referred Orchitt to a neurologist to rule out a stroke. The neurologist ordered an MRI; it showed "tiny areas of hyperintensity in the frontal lobes," which the neurologist concluded had "doubtful clinical significance." The neurologist prescribed medication for Orchitt's headaches. Dr. David Swanson, an ophthalmologist, evaluated Orchitt's eyes in February 1999 and found no abnormality except decreased tear production. Orchitt went to Dr. Stanley Smith, his family physician, in March 1999 with complaints about "mental slowing." Dr. Smith was concerned that Orchitt had suffered a stroke or transient ischemic attack.[5]

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[4] The American National Standards Institute (ANSI) also established exposure guidelines for radio frequency radiation. The board's engineering expert testified in his deposition that for the frequency Orchitt was exposed to, the ANSI standard is twice the FCC standard.

[5] A transient ischemic attack involves a small clot in the blood vessels of the brain that dissolves in a few hours.

In March 1999 Orchitt's neurologist referred him to Dr. Marvin Ziskin, a professor of radiology and medical physics at Temple University in Philadelphia. Dr. Ziskin did not examine Orchitt in person, but, using information Orchitt provided him, made calculations related to the amount of radio frequency radiation for Orchitt's exposure. Based on those calculations, Dr. Ziskin concluded that Orchitt was overexposed to radio frequency radiation.

Dr. Ziskin's conclusions differed from those of Kimberly Kantner, AT&T's radiation safety officer. Following the injury report, Kantner had calculated Orchitt's probable exposure level, using a mathematical model. Based on these calculations, she estimated a range of radiation exposure levels, with the high end being slightly in excess of the FCC maximum permissible limit. But because of the physical symptoms he described, she concluded that Orchitt had not been overexposed.

Orchitt consulted Dr. Paul Craig, a neuropsychologist, in August 1999. Dr. Craig's evaluation showed a relatively normal neurocognitive profile, although he noted "a very mild neurocognitive disorder" and a "significant level of depression." Dr. Craig's report stated that he did not have the necessary expertise to determine whether there was any link between Orchitt's symptoms and his radio frequency radiation exposure.

Orchitt began treatment at the Brain Injury Association of Alaska in October 1999. His main care provider there was Dr. Debra Russell; she has a Ph.D. in psychology, but is not a licensed clinical psychologist. Dr. Russell conducted some testing on Orchitt and issued an opinion letter to the claims adjuster, stating that Orchitt was suffering from a cognitive disorder as a result of his radio frequency radiation exposure. She provided Orchitt with ongoing rehabilitation therapy to address his continuing complaints of mental slowing and mood changes.

Dr. Russell also referred Orchitt to Dr. Daniel Amen, a psychiatrist, for a single photon emission computed tomography (SPECT) scan. A SPECT scan measures blood flow in the brain, looking at functional, rather than structural, changes.[6] Dr. Amen performed the SPECT scan in November 2000 and concluded that Orchitt had some decreased brain activity as well as depression. Dr. Amen attributed the neurological impairments he observed to radio frequency radiation exposure based on the history Orchitt gave and a discussion Dr. Amen had with Dr. Russell.

AT&T retained a panel of doctors to evaluate Orchitt. Dr. Patricia Sparks, a specialist in occupational and environmental medicine and internal medicine, examined Orchitt in September 2000. Dr. Sparks concluded that while Orchitt may have had some warming of his skin due to the radio frequency radiation exposure, the symptoms he described were not consistent with the known health effects of radio frequency radiation exposure. She believed that Orchitt was suffering from depression that was not directly related to the radio frequency radiation exposure.

Dr. David Coppel, a Washington neuropsychologist, also evaluated Orchitt for AT&T in September 2000. He did some of the same testing Dr. Craig had done in 1999. The testing showed some impairments in visual processing, but Dr. Coppel did not believe that they could be related to the radio frequency radiation exposure. He instead believed that depression was the most likely cause of Orchitt's difficulties, but he did not offer an opinion as to the origin of the depression.

Dr. Douglas Robinson, a Seattle psychiatrist, conducted a psychiatric evaluation of Orchitt for AT&T, also in September 2000. He concluded that the late onset of symptoms reported by Orchitt indicated that the radio frequency radiation exposure was an unlikely cause of Orchitt's difficulties. His opinion stated that the most

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[6] An MRI, in contrast, looks at structural changes.

likely explanation for Orchitt's complaints was depression and somatization due to stress. He identified several stressors that could have contributed to the depression.

Because of the complex medical issues, the board ordered a second independent medical evaluation (SIME) in April 2000. The board selected Dr. Charles Sutton, a neurosurgeon, to conduct the evaluation. Dr. Sutton spoke with Orchitt by phone and was provided extensive medical records. Dr. Sutton asked the board to hire an engineer as a consultant to give him a better idea of how much radio frequency radiation Orchitt had been exposed to.

At Dr. Sutton's request, the board hired Dr. Arthur Guy, a professor emeritus of electrical engineering at the University of Washington. Dr. Guy had done extensive work in the area of the biological effects of radio frequency radiation. He conducted three computer models of the accident. The first was based on information received from AT&T. After the report based on the first model concluded that there was no overexposure, Orchitt wrote to Dr. Guy, describing the incident. Dr. Guy then ran a second model, using the information that Orchitt provided. This scenario also showed that Orchitt had not been overexposed to radio frequency radiation. Orchitt again contacted Dr. Guy and supplied other information. Dr. Guy then made a third set of calculations. Because there was conflicting evidence about the placement of possible reflectors, Dr. Guy placed the reflectors in what he considered to be the worst possible placement in terms of radiation exposure. The third scenario produced an exposure that was approximately nine and a half percent over the FCC exposure limits, but not enough to cause biological effects. After receiving Dr. Guy's reports, Dr. Sutton concluded that Orchitt had not suffered any injury related to the radio frequency radiation exposure beyond dermal heating, which Orchitt experienced as a sensation akin to sunburn.

Orchitt's board hearing was scheduled to begin on April 8, 2003. The parties attended a pre-hearing conference on March 10, 2003. Orchitt stated at that conference that he would be submitting two new expert reports, one from Dr. Russell, and one from a newly identified expert, Dr. James May, a neuropsychologist. Dr. May's report concluded that Orchitt suffered from organic personality syndrome and mood disorder due to general medical conditions and that these conditions related to his exposure to radio frequency radiation. In spite of AT&T's objection, the board refused to exclude the reports because the board reasoned that they were filed within the twenty-day deadline for filing evidence.[7]

A short time later, AT&T requested a continuance so that it could get a follow-up employer's medical examination (EME) of Orchitt in response to the new expert reports. AT&T later withdrew that request with the understanding that Orchitt would attend an EME before the hearing. AT&T scheduled the EME for April 1-3, 2003 in Seattle; however, in a March 19 letter from his attorney, Orchitt indicated that he would not be able to attend the EME as scheduled. AT&T requested a board hearing to address several issues, including the EME and AT&T's renewed request for a continuance.

At a board hearing on April 1, Orchitt said he would submit that day another new expert report from another new expert, Dr. Jeff Keene, a neuro-ophthalmologist. Dr. Keene diagnosed several vision disorders in Orchitt and made recommendations for treatment. AT&T told the board that it had not yet received all the information it had requested from Dr. May and that Dr. May had not appeared at his scheduled deposition. AT&T asked the board to either strike Dr. May's report or, alternatively, grant a continuance to allow AT&T to (1) demand that Dr. May release his

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[7] 8 Alaska Administrative Code (AAC) 45.120(f) (2004).

report and (2) compel Orchitt to attend a follow-up EME. The board denied AT&T's request to strike Dr. May's report, decided that it would be unreasonable to require Orchitt to attend a follow-up EME so close to the April 8 main hearing, and reserved ruling on AT&T's continuance request.

At the April 8 hearing AT&T renewed its request for a continuance for the purpose of developing expert testimony to rebut what it called Dr. May's "alleged" report. The board denied the request but told AT&T's attorney that she could renew the request or make objections the following day.

At the time of the hearing Dr. Keene was out of state and unavailable to testify. The board admitted Dr. Keene's report and said it would hold the record open for rebuttal or cross-examination. Although the board had admitted Dr. May's report into evidence, and although Dr. May was available, Orchitt did not present him as a witness. AT&T objected to a board ruling that if AT&T wanted to cross-examine Dr. May, it would have to do so during the time allotted for its case-in-chief. AT&T's counsel said that she wanted to think about whether she wanted to take the time from her case-in-chief to cross-examine Dr. May. AT&T never thereafter renewed its request to cross-examine Dr. May.

At the end of the hearing AT&T objected to the denial of its continuance request and also stated that it would waive cross-examination of Drs. May and Keene. The board chair told AT&T that the board would not leave the record open for a follow-up EME and that the board was closing the evidentiary record at that time. AT&T did not object to closing the record.

The board's post-hearing decision and order found that Orchitt had been exposed to excessive amounts of radio frequency radiation. It found that the models of Dr. Guy and Kimberly Kantner did not correspond with the "known facts" in the case.

In finding that Orchitt had been overexposed, it relied on the testimony of Orchitt, Sorenson, and Dr. Ziskin. The board decided that Orchitt's mental deficits and depression were the result of the overexposure. Besides testimony from medical experts, the board relied on testimony from Orchitt's coworkers that Orchitt had a red face following the accident and that his mental and cognitive states changed after the accident. It also decided that Orchitt's predominant cause of disability was his depression and awarded him temporary total disability (TTD) benefits through April 21, 2001, the date on which Orchitt applied for unemployment benefits and certified that he was available for work. One member of the panel dissented, concluding that Orchitt's exposure caused only dermal symptoms that readily healed and that AT&T had paid all benefits due Orchitt.

AT&T appealed to the superior court, contending that the board violated AT&T's due process rights and that the decision was not supported by substantial evidence. AT&T alleged for the first time in the superior court that the board chair was biased. The superior court affirmed the board's decision, finding that the decision was supported by substantial evidence and that AT&T's due process rights had not been violated. AT&T appeals.

III. DISCUSSION

A. Standard of Review

We directly review the board's ruling.[8] Whether the board denied AT&T due process is a question of law that does not involve agency expertise; we substitute our judgment and exercise independent review of questions of law.[9] We review the board's

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[8] *Handley v. State, Dep't of Revenue*, 838 P.2d 1231, 1233 (Alaska 1992).

[9] *Kelly v. Zamarello*, 486 P.2d 906, 916 (Alaska 1971).

factual findings under the substantial evidence standard.[10] Substantial evidence is such evidence as a reasonable mind might accept as adequate to support a conclusion.[11]

B. Substantial Evidence Supports the Board's Decision.

The Alaska Workers' Compensation Act creates a presumption that an employee's claims are compensable.[12] Applying this presumption involves a three-step analysis.[13] First, to trigger the compensability presumption the employee must establish a link between his injury and his employment.[14] In this case, the board found that Orchitt had produced sufficient evidence to establish a link between Orchitt's employment and his disability. AT&T does not appear to contest this part of the board's findings.

Second, once the employee establishes the presumption of compensability, the employer may rebut the presumption with substantial evidence.[15] In Orchitt's case, the board found that AT&T had rebutted the presumption. Orchitt does not challenge the board's finding that AT&T rebutted the presumption.

Third, if an employer rebuts the presumption, the burden shifts to the employee to prove his claim by a preponderance of the evidence.[16] Here the board found that Orchitt had provided sufficient evidence to establish his claim. AT&T challenges

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[10] *DeYonge v. NANA/Marriott*, 1 P.3d 90, 94 (Alaska 2000).

[11] *Id.*

[12] AS 23.30.120; *Bradbury v. Chugach Elec. Ass'n*, 71 P.3d 901, 905 (Alaska 2003).

[13] *Bradbury*, 71 P.3d at 905 (quoting *Temple v. Denali Princess Lodge*, 21 P.3d 813, 815-16 (Alaska 2001)).

[14] *Id.*

[15] *Id.* at 906.

[16] *Id.*

the board's conclusion that Orchitt proved his claim by a preponderance of the evidence, raising several issues about whether substantial evidence supports the board's decision.

1. Overexposure to radio frequency radiation

AT&T first claims that the board's finding that Orchitt was overexposed to radio frequency radiation is not supported by substantial evidence because the board rejected the testimony of the board's engineering expert and AT&T's radiation expert and relied instead on the lay testimony of Orchitt and his coworker, as well as its own common sense. AT&T asserts that Dr. Ziskin, a medical doctor who also calculated Orchitt's exposure, retracted his initial opinion that Orchitt had been overexposed. It argues that because the issue of overexposure to radio frequency radiation is highly technical, any finding that Orchitt was overexposed must be supported by expert scientific testimony. It alleges that only Kimberly Kantner and Dr. Guy had adequate expertise to properly evaluate the level of Orchitt's exposure.

In some workers' compensation cases expert medical testimony is necessary to demonstrate a relationship between the claimant's employment and his disability.[17] Whether expert testimony is necessary depends on the probative value of the available lay evidence and the complexity of the medical facts involved.[18] AT&T relies on *Commercial Union Cos. v. Smallwood* in arguing that the board erred in its finding of overexposure. But the board based its finding that Orchitt was overexposed to radiation not just on lay testimony and common sense; it also relied on Dr. Ziskin's expert opinion. Although AT&T contends that Dr. Ziskin retracted his opinion, the record does not support this assertion. In his April 16, 1999 letter, he did not, as AT&T argues, say that

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[17] *Commercial Union Cos. v. Smallwood*, 550 P.2d 1261, 1267 (Alaska 1976).

[18] *Veco, Inc. v. Wolfer*, 693 P.2d 865, 871 (Alaska 1985).

it was unlikely that Orchitt sustained any significant overexposure. This letter contains no reference at all to exposure level. Nor did Dr. Ziskin change his mind in his deposition. Dr. Ziskin there testified that he still had concerns about whether Dr. Guy's models adequately accounted for "specular reflection" in determining how quickly the radiation would dissipate once it left the waveguide. AT&T points to the following excerpts from Dr. Ziskin's deposition testimony to support its argument:

> Q: Okay. All right. You haven't done any calculations or analysis yourself, have you, to the degree Dr. Guy has?
>
> A: About what? I mean, I do make calculations of radiation exposures and so on from antennas and things like that.
>
> Q: No. I mean in this case, Doctor. I'm sorry.
>
> A: Oh, in this particular case?
>
> Q: Yeah.
>
> A: The calculations that I made were very –
>
> Q: Rough?
>
> A: – limited. I took the total power that was coming through the waveguide, and I divided it by the area to come up with what was the average power density within the waveguide, which would be at the starting point.
>
> Q: Right. And it would be – it would lose power as it moved away, right?
>
> A: Well, within the waveguide, for the most part, the power will stay the same.
>
> Q: Within the waveguide, but once it –
>
> A: Within the waveguide. But once it leaves the waveguide, it gets attenuated, yeah. It depends upon

the nature of the way it leaves how rapidly it attenuates.

Q: Okay.

A: And most of the modeling was done on the idea of the inverse square law; but with specular reflection, that would not necessarily be true.

Q: And specular reflection you deal with in ultrasound, right?

A: That's correct.

. . . .

Q: . . . . Now, as to the differences between the sort[] of doctor[] that you are as compared to Dr. Guy, can you explain the differences for – so that we can understand the kind of testimonies that we can expect that you would be able to testify to accurately as opposed to the type of testimony Dr. Guy would be able to testify to accurately?

A: Well, there is a great deal of overlap. However, I'll – I think he would defer to me when it comes to medical judgment and biology. And unless there was something very specific, I will always defer to him when it comes to the physical engineering side of things. And I think the same thing is true with – it's possible that, because he has done some biological research, that there could be something that I would not be correct on and he would maybe correct me when it comes to even biology or even medicine, but in general, he would defer to my opinion when it comes to medical aspects.

We do not believe that Dr. Ziskin's testimony that he would defer to Dr. Guy's opinions with respect to physical engineering "unless there was something very specific" indicates that he retracted or otherwise abandoned his opinion that Orchitt was overexposed. Dr. Ziskin identified the specific issue of "specular reflection" as an area

of possible disagreement with Dr. Guy. In his deposition, Dr. Ziskin reiterated his belief that Dr. Guy's model had not taken "specular reflection" into account.

> A: Where I have a question is in the initial assumptions of what was the exposure ahead of time, what went into that model. And that's why I said I wanted to look to see what was the incident power density that he felt was started to expose the head with. And here is where I have a little different point of view. It has to do with reflections off of the flange. Because I have a background in ultrasound for diagnosis where we look at reflections, that's the whole diagnosis concerned with, I'm aware that you can have pretty large reflections off of structures that are relatively strong compared to just the scatter and the back scatter that you would have otherwise. And see, I haven't seen the actual setup.
>
> But it would be possible that if the two flanges that had been – that the waveguide segments that had been separated had overlapped and there was strong reflections coming off of one of the flanges, that that reflection could actually be quite high and might not be measured in the model – the modeling that Dr. Guy had used. That's sort of a rather important point because that would establish what that initial maximum exposure would be.
>
> . . . .
>
> Q: And Dr. Guy did take that into account in the third report. Do you see that?
>
> A: Well, looking at it, though, it's not clear to me whether or not it actually addressed what I call specular reflections, the type of reflections I'm talking about. It looked more of the defraction type of reflection, which is certainly true, but I don't know whether or not the model actually takes into account the specular reflections.

. . . .

A: The only thing, I'm not sure whether that model takes into account specular reflections or not. I just don't know for sure. I would have to ask Dr. Guy.

Dr. Ziskin's report and testimony provide substantial scientific evidence to support the board's finding. AT&T does not argue that Dr. Ziskin was not qualified to give an opinion about overexposure. Moreover, the board was free to credit the testimony of Dr. Ziskin over that of Dr. Guy and Kimberly Kantner. "[I]f the Board is faced with two or more conflicting medical opinions — each of which constitutes substantial evidence — and elects to rely upon one opinion rather than the other, we will affirm the Board's decision."[19] This is particularly so if the board believed that, based on Orchitt's description of the separation between the segments of the waveguide and his distance from the flange, specular reflection had occurred, and if it found that Dr. Ziskin's opinion more accurately matched how the accident happened than Dr. Guy's. We therefore find no merit in AT&T's contention that the board's finding was not supported by adequate scientific evidence.

Furthermore, in *Beauchamp v. Employers Liability Assurance Corp.*, we held that the board could permissibly combine uncontradicted lay testimony with uncertain medical testimony to support a conclusion that a worker's injury was work related.[20] Here, the board did not err in relying on the lay testimony of Orchitt's coworkers in combination with the medical evidence in determining that Orchitt had suffered a work-related injury.

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[19] *Yahara v. Constr. & Rigging, Inc.*, 851 P.2d 69, 72 (Alaska 1993) (citing *Delaney v. Alaska Airlines*, 693 P.2d 859, 863-65 (Alaska 1985)).

[20] *Beauchamp v. Employers Liab. Assurance Corp.*, 477 P.2d 993, 996-97 (Alaska 1970).

2. Medical evidence

AT&T also argues that the board's findings that Orchitt suffered a work-related injury and that Orchitt's mental deficits were related to the radio frequency radiation are based on "incompetent" medical evidence. It contends that the evidence presented by Drs. Russell and Amen does not meet the standards articulated in *State v. Coon*[21] to test the reliability of scientific testimony. Thus, it argues that the SPECT scan that was the foundation of Dr. Amen's diagnosis of brain damage does not satisfy *Coon* and that because Dr. Russell was not a licensed clinical psychologist, her opinions were not sufficiently reliable to provide a basis for the board's ruling.

In *State v. Coon* we set out factors for trial courts to use in determining whether expert scientific evidence is sufficiently reliable to be admitted into evidence.[22] AT&T did not object before the board to the admission of either Dr. Russell's or Dr. Amen's reports or testimony on this basis,[23] nor did it make an argument about the applicability of the *Coon* standard to workers' compensation cases in its superior court appeal. Because AT&T first raises the issue before us, it has waived the issue.[24]

AT&T did argue before the board, as it argues here, that Dr. Russell's testimony should not be credited because she was not licensed as a clinical psychologist. But AT&T does not dispute that Dr. Russell has a doctorate degree in psychology and is certified as a rehabilitation specialist. These credentials provide her with some

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[21] *State v. Coon*, 974 P.2d 386 (Alaska 1999).

[22] *Id. at* 395 (citing *Daubert v. Merrill Dow Pharm., Inc.*, 509 U.S. 579, 593-94 (1993)).

[23] AT&T objected to the admission of Dr. Russell's March 4, 2003 report on other grounds.

[24] *Wagner v. Stuckagain Heights*, 926 P.2d 456, 459 (Alaska 1996).

expertise. The board did not make a specific finding about Dr. Russell's credibility or the weight it accorded her testimony; nonetheless, the board acted within its discretion in rejecting AT&T's challenge to her expertise and in admitting her testimony.[25]

AT&T also argues that the board must have relied on the opinions of Drs. Russell, May, and Keene in finding that Orchitt's injury caused his impairments.[26] It argues that none of these experts had sufficient expertise in radio frequency radiation exposure to be able to connect Orchitt's injury and his medical condition.

AT&T's argument overlooks the opinions of Drs. Ziskin and Smith. Dr. Ziskin stated in his letter to the claims adjuster that neurological problems would be expected to result from Orchitt's overexposure to radio frequency radiation. As we have already noted, AT&T is incorrect in asserting that Dr. Ziskin withdrew his opinion about Orchitt's overexposure. In addition, Dr. Smith wrote that he believed that Orchitt sustained neurocognitive deficits related to radio frequency radiation. AT&T does not argue that the medical opinions of Drs. Smith or Ziskin are suspect. The board has the sole power to determine witness credibility and assign weight to medical testimony.[27] "When medical experts disagree about the cause of an employee's injury, we have held that as a general rule 'it is undeniably the province of the Board and not this court to decide who to believe and who to distrust.' "[28] Substantial medical evidence in the

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[25] AS 23.30.122.

[26] The board did not explicitly identify which experts it relied on in making its findings.

[27] AS 23.30.122.

[28] *Bradbury v. Chugach Elec. Ass'n*, 71 P.3d 901, 909 (Alaska 2003) (quoting *Childs v. Copper Valley Elec. Ass'n*, 860 P.2d 1184, 1189 (Alaska 1993)).

record supports the board's determination that Orchitt is entitled to medical and TTD benefits.

C. The Board Did Not Deny AT&T Due Process.

AT&T argues that a series of board procedural decisions violated its due process rights. It contends that the violations occurred when the board: (1) denied AT&T's right to cross-examine the employee's experts; (2) admitted Orchitt's last-minute expert reports without giving AT&T an opportunity to rebut the evidence through an EME; (3) denied AT&T's request for a continuance; and (4) violated its right to an impartial trier of fact when the hearing officer failed to disclose that he was also an officer of the AFL-CIO. Because we conclude that the board committed no procedural errors in these regards, it did not deny AT&T due process.

1. Cross-examination

AT&T argues that the board denied its right to cross-examine two of Orchitt's experts, Drs. May and Keene. Dr. Keene was not available to testify at the hearing because he was out of state. Orchitt did not present Dr. May for cross-examination because Orchitt ran out of time in presenting his case. The board gave AT&T the option of cross-examining Dr. May during the time allotted for its case-in-chief. AT&T objected to this option; in response, the board chair said, "If you want to cross-examine him, you can cross-examine him on your time tomorrow." AT&T's attorney indicated that she wanted to think about it; she also indicated that she wanted the record to close the next day and did not want to leave the record open for depositions. The next day, AT&T's attorney did not ask to cross-examine Dr. May, and at the end of the hearing, AT&T's counsel explicitly stated on the record that AT&T was waiving its right to cross-examine Drs. May and Keene.

AT&T contends on appeal that this was not a true waiver because the manner in which the board proposed to permit cross-examination was constitutionally defective. It argues that the board's admission of Dr. Keene's report after it had been informed that Dr. Keene would not be available for cross-examination at the hearing violated *Commercial Union Cos. v. Smallwood*.[29] In that case, we recognized that a party has the right to cross-examine a witness without bearing the cost of calling that witness herself.[30] Thus, when a party files a medical report with the board, that party has the responsibility of producing the report's author at a hearing or deposition to give the opposing party an opportunity to cross-examine the author if cross-examination is requested.[31] Workers' compensation regulations require the party seeking to introduce a witness's testimony by deposition to pay the initial cost of the deposition.[32] If a subpoena is required, the party requesting the subpoena must bear that cost as well.[33] The board's rulings here appear contrary to *Smallwood* because the board admitted Dr. Keene's and Dr. May's reports and then would have required AT&T to conduct depositions of Orchitt's experts in order to cross-examine them.

But AT&T did not object on the record to the method of cross-examination proposed by the board here, namely deposition testimony. Instead, it simply stated that it waived its right to cross-examine Drs. May and Keene. Because AT&T did not qualify

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[29] *Smallwood*, 550 P.2d at 1266-67.

[30] *Id.* at 1266.

[31] The board procedure for requesting cross-examination of the author of a medical report is set out in 8 AAC 45.052 (2004).

[32] 8 AAC 45.054(a) (2004).

[33] 8 AAC 45.054(c) (2004).

or limit its waiver of its right of cross-examination, it cannot now claim that the board erred in denying its right to cross-examine Drs. May and Keene.[34]

2. The board's refusal to require an EME before the hearing

We review an agency's application of a statute or regulation to a particular factual situation for abuse of discretion or arbitrariness.[35] The board did not abuse its discretion by denying AT&T's March 2003 pre-hearing request for a follow-up EME. Alaska Statute 23.30.095(e) provides that a medical examination requested by the employer "not less than 14 days after injury, and every 60 days thereafter, shall be presumed to be reasonable." AT&T made its request for a follow-up EME within the time limits set out in that statute. Before making its March 2003 request, AT&T made its last request in September 2000 that Orchitt attend a medical examination. Due to Orchitt's new expert reports, AT&T scheduled a follow-up EME in early April 2003. The board decided that the statutory presumption for an EME was overcome because AT&T requested the follow-up EME too close to the April 8, 2003 hearing date. At the April 1 hearing, the board gave AT&T the option of obtaining a follow-up EME after the hearing. The board later ruled that after the hearing ended it would not leave the record open for AT&T to submit a follow-up EME.

Although it may appear that the board reversed course, AT&T told the board on April 8 that it wanted the record to close the following day, April 9. Because AT&T affirmatively asked that the record close on April 9, there was no reason for the board to leave the record open for AT&T to submit a follow-up EME. We cannot

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[34] *Williams v. Abood*, 53 P.3d 134, 148 (Alaska 2002) ("[F]ailure to make the appropriate objection during the hearing waives the right to appeal procedural errors.").

[35] *See Rose v. Commercial Fisheries Entry Comm'n*, 647 P.2d 154, 161 (Alaska 1982).

determine whether AT&T could have been harmed by the board's action in denying AT&T's request for a pre-hearing follow-up EME, because AT&T apparently took no action after the hearing to obtain a follow-up EME. The board had given AT&T an opportunity to obtain a post-hearing EME. Nothing prevented AT&T from scheduling an EME after the hearing and petitioning the board to reopen the record to consider it.[36] If the board had then refused to reopen the record to consider the EME, the EME would have functioned like an offer of proof available to any appellate tribunal determining whether AT&T was harmed by the board's failure to require an EME before the hearing or its refusal to consider any evidence produced by the EME.[37] And if the board had reopened the record and considered the EME evidence, any possible error in failing to require a pre-hearing EME would have been harmless.

Moreover, even though AT&T makes much of the board's denial of a pre-hearing follow-up EME, it does not explain why other measures short of an EME would have been unsuccessful in rebutting Orchitt's last-minute experts. AT&T does not explain, for example, why it could not have called or why it did not call Dr. Swanson, the ophthalmologist who examined Orchitt and found nothing wrong, as a witness to rebut Dr. Keene's report. It also does not explain why cross-examination without an EME might not have been effective. AT&T also does not explain why it needed an actual examination of Orchitt when it could have used the raw data generated by Dr. May's tests

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[36] Nothing in the statute requires that an EME occur before a hearing. AS 23.30.095(e) provides, in part, "The employee shall, after an injury, at reasonable times during the continuance of the disability . . . submit to an examination by a physician . . . of the employer's choice . . . ."

[37] *Cf. Adamson v. Univ. of Alaska*, 819 P.2d 886, 889-90 (Alaska 1991).

of Orchitt.[38] Furthermore, Dr. Robinson, one of AT&T's experts, testified at the hearing that he had read Dr. May's report, and he offered general testimony tending to discount neuropsychological testing.

Finally, AT&T did not object at the end of the hearing to closing the record. It did not ask to present rebuttal evidence in any form other than a follow-up EME, nor did it make an offer of proof about what evidence it might have offered in rebuttal. A party's failure to make an offer of proof acts as a waiver of any claim of error regarding the exclusion of unspecified evidence.[39]

3. The board's denial of AT&T's request for a continuance

Soon after Orchitt presented his new expert reports in the month before the hearing, AT&T requested a continuance of its expert medical testimony. AT&T's continuance requests were all related to obtaining a follow-up EME to develop rebuttal evidence in response to Orchitt's experts, Dr. May and, later, Dr. Keene. AT&T made its requests in reliance on 8 AAC 45.074.

The regulatory standard for granting a continuance is good cause.[40] AT&T argued to the board that there was good cause for a continuance under 8 AAC 45.074(b)(1)(I) and 8 AAC 45.074(b)(1)(L), which state that good cause for a continuance exists when

> (I) the board determines that despite a party's due diligence in completing discovery before requesting a hearing and despite a party's good faith belief that the party was fully

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[38] AS 23.30.095(e). AT&T also alleged that it had difficulty obtaining the raw data from Dr. May's office, but the board indicated that it would consider this issue in deciding whether or not to grant a continuance.

[39] *Adamson*, 819 P.2d at 889-90.

[40] 8 AAC 45.074(b) (2004).

> prepared for the hearing, evidence was obtained by the opposing party after the request for hearing was filed which is or will be offered at the hearing, and due process required the party requesting the hearing be given an opportunity to obtain rebuttal evidence;
>
> . . .
>
> (L) the board determines that despite a party's due diligence, irreparable harm may result from a failure to grant the requested continuance or cancel the hearing.

"The scope of review for an agency's application of its own regulations to the facts is limited to whether the agency's decision was arbitrary, unreasonable, or an abuse of discretion."[41] The board did not abuse its discretion in failing to grant AT&T's request for a continuance. The board appears to have balanced its desire to go forward with the hearing in the case, which had been pending for quite some time,[42] with AT&T's due process rights when it: (1) offered to leave the record open so that AT&T could rebut Dr. Keene's report or cross-examine Dr. Keene at deposition;[43] (2) afforded AT&T the opportunity to cross-examine Dr. May at the hearing — albeit on AT&T's own time; and (3) offered to leave the record open at the close of the hearing.[44] AT&T waived cross-

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[41] *J.L. Hodges v. Alaska Constructors, Inc.*, 957 P.2d 957, 960 (Alaska 1998) (citing *Rose v. Commercial Fisheries Entry Comm'n*, 647 P.2d 154, 161 (Alaska 1982)).

[42] In an interlocutory decision in the case, the board noted that the chair of the pre-hearing conference did not want to grant a continuance "because the case had been languishing for several years (though not necessarily through the fault of the employer) . . . ."

[43] *Cf. State, Dep't of Natural Res. v. Greenpeace*, 96 P.3d 1056, 1066 (Alaska 2004).

[44] The board chair said to AT&T's attorney, "[I]f you want to leave the record open I'm certainly open to doing that." He also asked if AT&T wanted to leave the (continued...)

examination of Drs. Keene and May and did not object to the board's closing the record at the end of the hearing. Because the board offered AT&T some opportunity to present evidence after the hearing in lieu of granting a continuance, we cannot say that the board abused its discretion here.

4. AT&T's right to an impartial tribunal

Due process gives a party the right to have an impartial tribunal hear the party's case.[45] AT&T contends that the hearing officer in this case was biased because he had been elected to an officer position in the Alaska Chapter of the AFL-CIO the summer before the hearing. It argues that AS 23.30.005(a) and (e) require that a workers' compensation hearing panel be balanced, and that the panel here did not meet this requirement. It also asserts that the hearing officer should have disqualified himself under AS 44.62.450(c), one of the provisions of the Alaska Administrative Procedure Act.[46] Finally, it contends that the hearing officer's conduct violated the Alaska Code of Judicial Conduct.

a. Actual bias or prejudgment

Administrative agency personnel are presumed to be honest and impartial until a party shows actual bias or prejudgment.[47] To show hearing officer bias, a party must show that the hearing officer had a predisposition to find against a party or that the

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[44] (...continued)
record open for cross-examination after he said that he would not leave the record open for a follow-up EME.

[45] *Schweiker v. McClure*, 456 U.S. 188, 195 (1982); *Amerada Hess Pipeline Corp. v. Alaska Pub. Utils. Comm'n*, 711 P.2d 1170, 1180 (Alaska 1986).

[46] AS 44.62.010–.950.

[47] *Bruner v. Peterson*, 944 P.2d 43, 49 (Alaska 1997) (citing *Earth Res. Co. v. State*, 665 P.2d 960, 962 n.1 (Alaska 1983)).

hearing officer interfered with the orderly presentation of the evidence.[48] We conclude that the hearing officer's position as an AFL-CIO vice president is insufficient to show actual or probable bias on its own. Although the chair ruled against AT&T on some procedural questions, that alone is not sufficient to show a predisposition to find against AT&T. AT&T has made no showing that the hearing officer prejudged any facts in this case or was motivated by actual bias in ruling on procedural issues.

b. Workers' compensation statute

AT&T alleges that the hearing panel violated the statutory requirement of a balanced hearing panel because the chair's union activities upset the balance in the panel's composition. The workers' compensation act provides for panels of three members: a representative of labor, a representative of industry, and the commissioner of labor or "the designated representative of the commissioner."[49] The applicable statute does not say that the panel must be neutral, nor does it restrict in any way whom the commissioner can appoint as his representative. There is no indication that the chair (the commissioner's designee) was acting as a second representative of labor or in a non-neutral capacity. We are unconvinced that his ancillary union position unbalanced the panel.

c. The Alaska Code of Judicial Conduct

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[48] *Tachick Freight Lines v. Dep't of Labor*, 773 P.2d 451, 453 (Alaska 1989) (citing *In re Cornelius*, 520 P.2d 76, 83 (Alaska 1974)).

[49] Former AS 23.30.005(a). The statute was amended in 2005 to say, "Each panel must include the commissioner of labor and workforce development or a hearing officer designated to represent the commissioner, a representative of industry, and a representative of labor . . . ." The 2005 amendments also authorize the board to provide procedures to avoid conflicts and the appearance of impropriety in hearings. AS 23.30.005(a).

AT&T argues at length that the hearing officer violated the Alaska Code of Judicial Conduct but does not address the threshold issue of the code's applicability to workers' compensation hearing officers. It relies on one 1988 board ethics bulletin that looked to the Code of Judicial Conduct for guidance on the issue of giving references. *Louisiana Pacific Corp. v. Koons*, cited by AT&T to support its argument, deals with a hearing officer's ex parte communications, which are explicitly prohibited by the Alaska Administrative Procedure Act, and says nothing about the Code of Judicial Conduct.[50] Because AT&T has not adequately briefed the issue of the applicability of the Code of Judicial Conduct to workers' compensation hearing officers, we will not consider it.[51] Nor will we consider any claim that the hearing officer's conduct violated the Administrative Procedure Act's provision regarding disqualification of hearing officers.[52]

We do not believe that the hearing officer's position as a union officer violated the code in any event. While the Code of Judicial Conduct prohibits judges from serving as officers of organizations that are likely to be engaged in proceedings that come before the judge,[53] unions are not generally parties before the workers' compensation board, even though their individual members may come before the board. Hearing officers in the workers' compensation division are members of the Alaska State Employee's Association, which is affiliated with the AFL-CIO. Because the hearing

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[50] *Louisiana Pac. Corp. v. Koons*, 816 P.2d 1379, 1382-83 (1979).

[51] *Adamson*, 819 P.2d at 889 n.3. We note that new regulations governing hearing officer conduct look to the Code of Judicial Conduct for guidance, although they do not explicitly apply the code to hearing officers. 2 AAC 64.030(c) (2006). No one argues that these regulations apply here, and we express no opinion as to the applicability of the Code of Judicial Conduct to hearing officers in future cases.

[52] *Id.*; AS 44.62.450(c).

[53] Alaska Code of Judicial Conduct Canon 4C(3)(a) (2006).

officer's position as a union officer seems to have arisen directly out of his employment for the state, AT&T's argument could potentially disqualify all hearing officers.

IV. CONCLUSION

The board did not abuse its discretion in its procedural rulings; it therefore did not deny AT&T due process. Because substantial evidence exists in the record to support the board's findings, we AFFIRM the superior court judgment that affirmed the board's rulings.

Courtroom A

17438.12
October 12, 2012

EXEMPT OF REGISTRATION, TAX STAMPS AND FEES

[coat of arms]

Subject

ITALIAN REPUBLIC

IN THE NAME OF THE ITALIAN PEOPLE

THE SUPREME COURT OF CASSATION

LABOUR SECTION

General Register No. 11864/2010
Chron. 17435
Folder

Consisting of the following judges:

Maura La Terza	- Presiding Judge - Hearing of October 3, 2012
Gianfranco Bandini	- Reporting Judge - Public hearing
Daniela Biasutto	- Panel Judge
Caterina Marotta	- Panel Judge
Irene Tricomi	- Panel Judge

delivered the following

SENTENCE

in Appeal No. 11864-2010 filed by:

INAIL - *Istituto nazionale per l'Assicurazione contro gli Infortuni sul Lavoro*

[National Insurance Institute for Industrial Accidents] ... , represented by interim counsel, whose choice of domicile is in Rome at Via ... , at the law offices of

... , to represent and defend it as assigned in the records;

Petitioner

versus

... , whose

domicile of choice is in Rome at Via ... , at the law

offices of

... , to represent and defend him as assigned in the records;

Cross petitioner

against Sentence No. 614/2009 of the Court of Appeal of Brescia, filed on December 22, 2009, General Register No. 361/2008;

having heard the case report given by Judge Gianfranco Bandini at the public hearing on October 3, 2012;

having heard Counsel ... ;

having heard Counsel ... ;

having heard on behalf of the Public Prosecutor, the Deputy Public Prosecutor Gianfranco Servello,

whose concluding decision was to grant the petition.

TRIAL PROCEEDINGS

In its ruling of December 10–22, 2009, the Brescia Court of Appeal reversed the lower-court decision and sentenced INAIL to pay to Innocente ... the benefits for occupational disease recognized for an 80% disability.

Mr. ... had filed a court case claiming that, as a consequence of his protracted use of cordless and cellular phones next to his left ear for five to six hours per day over a period of twelve years, he had developed a severe cancer pathology. The evidence gathered and medical-legal investigations made it possible to confirm, over the course of the proceedings, that grounds did indeed exist both with regard to telephone use for the periods indicated while performing work activities, and the actual onset of a "Gasserian ganglion neuroma" (tumour of the cranial nerves, in particular, the acoustic nerve, and more rarely, as in the case in question, the trigeminal cranial nerve), with absolutely serious effects despite the therapy administered, including surgery. As seen in the appeal sentence, the existence of these factual elements was not contested during the appeal, since the issue examined by the appeal Judge was the causal link between telephone use and the onset of the disease.

After requesting a new medical-legal opinion, the territorial court considered it necessary to follow the conclusions reached by the court-appointed expert witness at the appeal proceedings, noting the following in particular:

- Mobile phones (cordless) and cell phones operate using electromagnetic waves, and according to the court-appointed expert witness: "In the literature, studies on brain tumours that report on neuromas focus on tumours in the area of the acoustic nerve, which is the most common. Since the histotype is the same, it is entirely logical to compare the data to trigeminal neuroma". Specifically, it was observed that the two neuromas are found in the same area of the body, since both the nerves involved are in the cerebellopontine angle, which is a well defined and limited area of the cranial cavity that is indeed within the magnetic field generated by the use of cell and cordless phones.

- The report of the court-appointed expert witness summarized in a table some of the studies conducted from 2005 to 2009, among which three studies conducted by the ... group showed a significant increase in the risk for neuroma (risk here meaning risk relating to the degree of association between exposure to a particular risk factor and the onset of a certain disease, calculated as the ratio of the rates of incidence in exposed cases [numerator] to those in unexposed cases [denominator]).

- a 2009 study of the same group had also considered other factors such as age at time of exposure, side of use, and exposure time, and in the case of acoustic neuromas, indicated an odd ratio for the use of cordless phones of 1.5, and of 1.7 for cell phones. Taking into account greater use over a period of 10 years, the odd ratios were 1.3 and 1.9, respectively. Odd ratio is defined as the ratio of the frequency with which an event occurs within a group of patients to the frequency with which the same event occurs within a group of control patients. Therefore, if the odd ratio is greater than 1, the probability that the event in

question (such as a disease) will occur in a group (such as exposed subjects) is greater in comparison to another group (such as unexposed subjects), while ratios of less than 1 have the opposite meaning.

- A recent review of the International Commission on Non-ionizing Radiation Protection drew attention to the limitations of the epidemiological studies conducted up to that point, concluding that, at the time, no convincing evidence existed on the role played by radio frequencies in causing tumours, but added that nor had the studies ruled out the association.

- Another authoritative review (Kundi in 2009) had confirmed the suspicions raised by the epidemiological studies about exposure time, and concluded that individual risk was low, but present. Exposure could affect the development of a tumour in various ways: by interacting during the initial induction stage, by changing the rate of development of slow-growing tumours (such as neuromas) and accelerating their growth, and by preventing potential natural involution.

- An analysis of the literature did not result in a conclusive judgment, but despite all the limitations inherent in these types of studies, an added risk for brain tumours, and for neuroma in particular, was documented in cases of exposures to radio frequencies from cordless and cell phones over periods of more than ten years.

- Exposure time was a very significant valuational element, since the 2006 study had found that exposure over periods of more than ten years resulted in a relative risk of 2.9, which was definitely significant.

- This was therefore considered an "individual" case that the experts attributed to the "probabilistic-inductive model" and to "weak causality", but which was nonetheless valid in the area of social security.

- According to the court-appointed expert witness, it had to be recognized that radio frequencies played at least a co-causal role in the development of the insured's tumour, thus representing a conditional probability.

- INAIL's criticism of the studies used by the court-appointed expert witness missed the mark, since the WHO 2000 study, that had ruled out negative health effects was based on data that were even more dated. Therefore, it had not taken into account the recently more widespread and frequent use of these devices, and the fact that these types of tumours grow slowly, thus making the 2009 studies more reliable.

- In addition, as pointed out by the expert witness for ... , the 2009 studies had not been conducted on a low number of cases, but rather on the total number of cases (679) that had occurred in one year in Italy. In addition, unlike the IARC study, which was co-funded by cell phone manufacturers, the studies cited by the court-appointed expert witness were independent.

- Furthermore, as noted by the expert witness for ... , the comparison of the individual risk level calculated by the court-appointed expert witness of 2.9 to the universally recognized risk factor for exposure to ionizing radiation, meant considering that for the Japanese survivors of atomic explosions in Hiroshima

and Nagasaki, the relative risk for "all cancers" combined is estimated to be 1.39 (ranging from a minimum of 1.22 for "uterine and cervical" cancer to a maximum of 4.92 for "leukemia"). This means that the average cancer risk for ionizing radiation is lower than the risk from exposure to radio frequencies with respect to intracranial neuromas, which further supports the real significance of the statements made by the court-appointed expert witness.

- According to the jurisprudence of legality, in cases of unlisted occupational disease, as well as in cases of multifactorial disease, evidence of a work-related cause that affects workers must be evaluated in terms of reasonable certainty, so that, having ruled out the relevance of the mere possibility of occupational origin, the origin may instead be recognized as having a significant degree of probability. In this respect, the judge must not only allow the insured to submit admissible and legally established evidence, but must also evaluate the expert witness' probabilistic conclusions on causal links, taking into consideration that the occupational nature of the disease may be inferred with a high degree of probability based on the type of work performed, the nature of the machinery present in the workplace, the duration of the work activity, and the absence of other alternative or concurrent non-occupational factors that could constitute the cause of the disease.

- Therefore, it should have been concluded that the high probability of a causal link had been established as is required under the legislation.

The appeal filed by INAIL against the above sentence of the territorial court is based on two reasons and presented in the pleadings.

The respondent, Innocente ... , issued the counter-petition presented in the pleadings.

REASONS FOR DECISION

1. In the first reason, the appellant, INAIL, alleges the violation of Article 3 of Presidential Decree No. 1124/65, noting that in accordance with legal principles based on the jurisprudence of legality, the correct application of the above law requires an assessment, based on epidemiological data and literature that are considered reliable by the scientific community, which establishes that the party appearing before the court developed a disease, with minimum probability, for the specific disease alleged and diagnosed. Therefore, the above causal relationship could not be supported "by the personal evaluation of the court official, based on a preference for certain epidemiological data over others, but must be upheld by a judgment on the reliability of the actual data made by the scientific community." In the case in question, the court-appointed expert witness had focussed solely on the findings of the ... group, instead of on those of the scientific community. In addition, the court-appointed expert witness had arbitrarily used the correlation between exposure to radio frequencies and neuroma of the acoustic nerve, suggested by the Hardell group, to confirm a causal relationship, including with a judgment of conditional probability, between these radio frequencies and trigeminal neuroma. It should have been pointed out that when updating the list of diseases approved by Ministerial Decree on December 11, 2009, [Italy's] scientific board for the identification and monitoring of disease, which it is obligated to report in accordance with Article 139 of

Presidential Decree No. 1124/65, did not consider it necessary to include cranial nerve tumours caused by exposure to radio frequencies among the diseases of possible occupational origin.

1.2 Based on the jurisprudence of this Court, in cases of unlisted occupational diseases, as well as multifactorial diseases, the onus of proving an occupational cause, which lies with the worker, must be evaluated in terms of reasonable certainty, in the sense that, having ruled out the relevance of the mere possibility of occupational origin, the origin may instead be recognized as having a significant degree of probability. In this respect, the judge must not only allow the insured to submit admissible and legally established evidence, but must also evaluate the expert witness' probabilistic conclusions on causal links, by using any official measures to gather additional evidence in relation to degree and the worker's exposure to risk factors, and also taking into consideration that the occupational nature of the disease may be inferred with a high degree of probability based on the type of work performed, the nature of the machinery present in the workplace, the duration of the work activity, and the absence of other alternative or concurrent non-occupational factors that could constitute the cause of the disease (see, among others, Cassation Nos. 6434/1994, 5352/2002, 11128/2004, 15080/2009).

The sentence under appeal applied these principles, and based on the considerations made throughout the case records, recognized that the high probability of a causal link had been established.

Therefore, the Court does not recognize the claim of an error in violation of the law, which is based on the alleged erroneous evaluation (by the court-appointed expert witness and the territorial court) of the reliability of the data taken into consideration in order to support this requirement, and therefore, essentially on an error in motive (as argued in the second reason of the appeal).

The reason in question is therefore dismissed.

2. In the second reason, the appellant, INAIL, alleges an error in motive, based on the following assumptions:

- After having shown that the review of the International Commission on Non-ionizing Radiation Protection had concluded that, at the time, no convincing evidence existed on the role played by radio frequencies in causing cancer, while not ruling out the association, the court-appointed expert witness at the appeal level, with no logical consequence and without providing a reason, had reached the conclusion of the conditional probability of a role for radio frequencies at least as a co-existing cause in the development of the type of cancer that they cause.

- Completely lacking in any scientific foundation was the alleged similarity in the etiopathogenesis of neuroma of the acoustic nerve and trigeminal neuroma, claiming a "widely held view" in medical science that tumours of the same histotype, but in different locations, even if within the same anatomical region, may have different causes, and that any potential carcinogen that comes into contact with the human body modifies its action according to the tissues that it passes through or that it comes into contact with. In fact, the acoustic nerve and

the trigeminal nerve, especially the Gasserian ganglion, are located in different areas in the skull, and different anatomical structures separate them from the outside and from each other.

- The territorial court did not respond to the observations made by INAIL, including with reference to the fact that an international "Interphone" epidemiological study, which was "in progress", was being coordinated by IARC [International Agency for Research on Cancer], and that based on the precautionary principle, the WHO had suggested that a risk-management policy be applied in situations of "scientific uncertainty".

- The territorial court's statement on the reliability of the Hardell group's study, because it was independent in comparison to the "Interphone" study, which was co-funded by cell phone manufacturers, should have been considered scientifically irrelevant, since it overlooked that the latter study was funded by the European Union, and managed and coordinated by the WHO's International Agency for Research on Cancer.

- The territorial court also did not ask the court-appointed expert witness for clarifications in response to the cited critical comments.

2.1 The jurisprudence of legality has repeatedly stated that in cases that call for a medical-legal court-appointed expert witness, when the judges involved rely on the conclusions of the court official, in order for the alleged errors and omissions of the expert witness to constitute an error in motive of a sentence that may be brought before the Cassation Court, the related errors in formal logic must

constitute a clear deviation from the notions of medical science, or consist of illogical or scientifically incorrect statements. The onus lies with the interested party to provide the related sources, and not merely to make statements about the presentations made by the counter party, which are inadmissible as criticism of the decision of the judge who had relied on the findings of the expert witness (see among others Cassation, Nos. 16392/2004, 17324/2005, 7049/2007, 18906/2007).

In the case in question, in contesting the alleged similarity in the etiopathogenesis of neuroma of the acoustic nerve and trigeminal neuroma, the appellant, INAIL, made reference to a "widely held view", not specifying the legally established scientific sources entered in the record, on the basis of which the statements made by the court-appointed expert witness, and contained in the contested sentence, should have been considered scientifically incorrect, and concluded by asking the Court for an evaluation of inadmissibility based on legality.

Also irrelevant is the claim of an alleged lack of logical consequence and reason with regard to the conclusion of the conditional probability of the role that radio frequencies play even as a co-existing cause in the development of the type of cancers that they cause, since the ruling, as was shown throughout the case records, did not rest merely on the conclusions (with obvious differences) that had been reached by the cited review of the International Commission on Non-ionizing Radiation Protection, but rather on the findings of other epidemiological studies conducted on this subject.

Also relevant is the fact that, based on the observations of the court-appointed expert witness, the sentence under appeal had to attribute particular importance to the studies that had taken into consideration other elements, such as the length of the exposure, side of use, and exposure time, given that in the case in question, a causal link had to be established with a specific factual situation characterized by exposure to radio frequencies for an extended and continuous period of time (about 12 years) for an average of five to six hours per day, concentrated mainly on the insured's left ear (which, as is plainly evident, describes a situation that is not at all unlike the normal non-occupational use of a cell phone).

The observation regarding the greater reliability of these studies, because, unlike other studies, they were independent not having been co-funded by the cell phone manufacturers themselves, constitutes a further logical basis for the conclusions reached.

Nor was it inferred—and much less shown—that the epidemiological research whose conclusions were taken into particular consideration originated from working groups that lacked credibility and authority, and as such, were essentially outside the scientific community.

The petitioner maintained that the alleged preponderance should have been attributed to the conclusions of other research groups (whose investigations were understood at the time of the proceedings to still be "in progress"), and further requested a review of the case on the grounds of legality, which was not allowed.

In addition, since the territorial court had found in the considerations already made by the court-appointed expert witness and the expert witness for ... sufficient evidence to rebut INAIL's complaints, there was no need to instruct the court-appointed expert witness to provide further clarifications.

Therefore, the second reason for an appeal is also dismissed.

3. In conclusion, the appeal is rejected.

In view of the different findings of the rulings in this case, and of the novelty of the case in question from the perspective of factual distinction, the Court recommends the payment of court costs.

For these reasons,

the Court dismisses the appeal; payment of court costs.

So decided in Rome on October 3, 2012.

Reporting Judge
(Gianfranco Bandini)
[signature]

Presiding Judge
(Maura La Terza)
[signature]

[stamp:]

Registered with the Court Clerk
October 12, 2012
[signed:] Virgilio Poleggi
Court Clerk

[round stamp:] Supreme Court of Cassation

Court of Queen's Bench of Alberta

Citation: Brewer v. Fraser Milner Casgrain LLP, 2006 ABQB 258

Date: 20060407
Docket: 0503 05118
Registry: Edmonton

IN THE MATTER OF THE HUMAN RIGHTS, CITIZENSHIP AND MULTICULTURALISM ACT, R.S.A. 2000, C. H-14

AND IN THE MATTER OF THE DECISION OF THE CHIEF COMMISSIONER OF THE ALBERTA HUMAN RIGHTS AND CITIZENSHIP COMMISSION MADE ON SEPTEMBER 20, 2004 CONCLUDING THAT THE RESPONDENT FRASER MILNER CASGRAIN LLP &/or FMC SERVICES LIMITED PARTNERSHIP DID NOT DISCRIMINATE AGAINST THE APPLICANT ON THE GROUND OF PHYSICAL DISABILITY CONTRARY TO S. 7(1) OF THE HUMAN RIGHTS, CITIZENSHIP AND MULTI-CULTURALISM ACT.

Between:

Janice Brewer

Applicant

- and -

Fraser Milner Casgrain LLP
&/or FMC Services Limited Partnership
and the Chief Commissioner of
the Alberta Human Rights and Citizenship Commission

Respondents

Correction: A correction was issued on April 19, 2006. In the Reasons for Judgment issued April 7, 2006 the name Ritu Khullar was misspelled. The error is corrected in these Reasons for Judgment.

Reasons for Judgment
of the
Honourable Mr. Justice Brian R. Burrows

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[1] Janice Brewer seeks judicial review of the decision of the Chief Commissioner of the Alberta Human Rights and Citizenship Commission dismissing her complaint that her employer, Fraser Milner Casgrain LLP, discriminated against her on the ground of a physical disability. Ms. Brewer's complaint was that Fraser Milner Casgrain failed to reasonably accommodate her physical disability.

[2] Ms. Brewer was employed by Fraser Milner as a legal secretary starting in 1981. In 1998 she sought medical attention for an asthma-like condition. Exposure to specific triggers in the environment such as scents and perfumes would set off a constellation of symptoms including dyspnea (laboured breathing), chest tightness, lightheadedness, headache, rashes, dizziness and disorientation. Ms. Brewer's doctor suspected Ms. Brewer had multiple chemical sensitivities which her family doctor described as, ". . . a poorly understood and controversial diagnosis with no known solution apart from avoidance of the offending irritants".

[3] Fraser Milner asked its staff to refrain from the use of perfumes and fragrances to help Ms. Brewer avoid triggers. The lawyer to whom she was assigned altered the grooming products he used for the same purpose. Ms. Brewer was permitted to use a washroom in the office sick room, rather than the public washroom. Air cleaners were placed in the area in which she worked. She was allowed to use charcoal filtered disposable air masks when necessary. Her work hours were changed slightly so she would arrive at and leave the office later than most of the other employees and thereby avoid contact with crowds.

[4] It appears that these measures did not entirely resolve the problem. In 2001 Ms. Brewer's lawyer, Ms. Ritu Khullar, contacted a partner at Fraser Milner, Tom Wakeling, to discuss further measures that might be taken. Mr. Wakeling suggested that a report concerning Ms. Brewer's condition be obtained from a respiratory specialist. He provided a list of possible specialists who could be consulted. He expected this would assist in determining whether any further reasonable accommodation would be required or possible.

[5] Ms. Khullar provided letters from Ms. Brewer's family physician, Dr. Chandler, from an asthma specialist who had investigated her problem initially, and, from Dr. H. E. Hoffman, a specialist in occupational and environmental medicine. The asthma specialist, Dr. Paul Man, was one of the specialists Mr. Wakeling had suggested.

[6] Mr. Wakeling expressed disappointment that the report from the specialist was not current (it was more than 2 years old). Without conceding that Ms. Brewer had a "medical illness, disease or physical disorder", Mr. Wakeling agreed that Dr. Hoffman could visit Fraser Milner's offices to determine whether any changes could be made to assist Ms. Brewer. It was agreed that the cost of Dr. Hoffman's assessment would be shared by Ms. Brewer and Fraser Milner.

[7] In October 2001 Dr. Hoffman reported his findings and recommendations. He said:

[Ms. Brewer's] symptoms can be minimized by the following actions:

1. Minimize people traffic near her

    a. Locate her desk away from high traffic areas.

    b. Locate her desk away from a boardroom or meeting room.

    c. Locate her desk away from a people traffic conduit.

2. Minimize chemicals in the workplace

    a. Provide a policy for all staff to use minimal scented products. This will require some mechanism of education, reinforcement, and reporting of breaks in policy. An occupational health program at this workplace (as described below) could facilitate this activity.

    b. Provide several types of meeting rooms for clients near the main reception area, so that clients are not required to go through the whole office area.

    c. Review cleaning materials and procedures.

3. Control chemical exposure

    a. Engineering Controls

        i. Barriers

            1. Provide a plexiglass barrier to separate Ms. Brewer's workstation from the traffic flow areas.

        ii. Ventilation

            1. Maintain adequate general ventilation in floor.

            2. Optimize local ventilation over Ms. Brewer's workstation. Airflow directly over Ms. Brewer's work area could be increased. This would provide direction of airflow to her workstation and then away from the workstation. This would allow chemicals and fragrances to be dispersed away from her workstation. An example of this change in local air intake is the photocopier room, where the

airflow in the photocopier room has been specifically increased for the operational demands of the photocopier. Similarly, local ventilation over Ms. Brewer's workstation could be increased to meet the operational demands (health requirements) of Ms. Brewer. This balancing of the air flow requires very little cost. Essentially, the airflow for the floor needs to be adjusted, with no requirement for special equipment.

iii. Local air cleaners, as she has been using already at her desk.

b. Administrative controls

i. Enable Ms. Brewer to work hours that minimize symptoms.

ii. Enable Ms. Brewer to take some work home for days that she cannot tolerate the workplace environment.

iii. Ensure that staff assigned to work within a close physical proximity to Ms. Brewer understand and respect her health condition, or alternatively ensure that no staff are assigned to work within a close physical proximity.

c. Respiratory protective equipment (RPE) can be used where symptoms occur. Ms. Brewer may use a disposable charcoal mask for RPE. The employer should supply RPE. RPE is a last resort at protection from chemicals, as other controls are recommended.

4. Minimize requirement for Ms. Brewer to need to leave her work station:

a. Equip her work station with more equipment:

i. Printer

ii. Fax

iii. Copier

b. Coordinate deliveries so that she does not need to go to mail room.
c. Delegate large photocopying work to an office aide.

[8] Dr. Hoffman acknowledged that some of these suggestions had already been implemented in an *ad hoc* way, but proposed that a more systematic approach to addressing all of the areas he had identified be undertaken. He observed, "No steps can entirely eliminate the risk and exposures, but they can be effectively minimized and controlled". His report also addressed the question of the cost of the steps he proposed. He did not think the costs would be unreasonable.

[9] Ms. Brewer's lawyer forwarded Dr. Hoffman's report to Mr. Wakeling and requested that four of his suggestions in particular be implemented:

1. Minimizing people traffic near Ms. Brewer by the location of her desk away from high traffic areas, boardrooms or meeting rooms, or people traffic conduit.

2. Provide a barrier to separate Ms. Brewer's workstation from the traffic flow areas.

3. Maintaining adequate general ventilation and optimizing local ventilation around workstations.

4. Minimizing the requirement for Ms. Brewer to need to leave her workstation by equipping her workstation with a printer/fax/copier capabilities.

[10] At the time Dr. Hoffman visited Fraser Milner, Ms. Brewer's workstation was located on the 29th floor. The 30th floor was under renovations and when they were done Ms. Brewer's workstation was relocated there. She moved to her 30th floor workstation on November 12, 2001. She found that her symptoms became worse and attributed this to the paints, glues and carpeting that had been used in the renovations. She informed Fraser Milner of this aggravation of her condition. She left work on November 14, 2001.

[11] There was one accommodation previously provided that was not available on the 30th floor. Ms. Brewer would have to use the public washroom. Ms. Khullar wrote Mr. Wakeling to advise that this would have an adverse effect on Ms. Brewer and to request that the accommodation of a separate washroom be continued.

[12] On December 11, 2001 Ms. Khullar observed in a letter to Mr. Wakeling that there had been no reply to her requests for implementation of some of Dr. Hoffman's recommendations, or to her request regarding the washroom accommodation. She said that Ms. Brewer had encountered significant difficulty in her new 30th floor work space and for that reason had left work and applied for short term disability.

[13] On December 14, 2001, Ms. Brewer was advised that her work assignment would be changed. She would no longer work with the lawyer with whom she had worked for 13 years

but would be assigned to do word processing at a work station where she would have reduced contact with other people. She was also advised that it was not possible to continue the washroom accommodation to her on the 30th floor because the only washroom on that floor was the public washroom.

[14] On January 14, 2002 Ms. Khullar inquired as to Fraser Milner's intentions regarding implementation of Dr. Hoffman's recommendations and whether Fraser Milner was prepared to arrange to have non-fragrant soap and non-fragrant cleaners used in the 30th floor washroom.

[15] Mr. Wakeling responded on January 25, 2002. He said that Ms. Brewer would be assigned to a workstation in the word processing area and her ability to work in that environment would be monitored. There was no response to Ms. Khullar's inquiry as to Fraser Milner's intentions regarding Dr. Hoffman's recommendations.

[16] Ms. Brewer did not return to work. After leaving work on November 14, 2001 she went on short term disability. Later she applied for long term disability but her application was unsuccessful.

[17] On October 17, 2002 she filed a complaint with the Alberta Human Rights and Citizenship Commission. A Human Rights Officer investigated and issued an Investigation Report on June 18, 2004. After summarizing the information he gathered in his investigation, the Investigator considered whether Fraser Milner made reasonable attempts to accommodate Ms. Brewer's physical disability.

[18] He noted the steps Fraser Milner had taken prior to Dr. Hoffman's recommendation to accommodate Ms. Brewer's situation. I described these in paragraph [3] above. He also summarized the steps Fraser Milner had planned for accommodating Ms. Brewer after her move to the renovated 30th floor. These were to assign her to a word processing workstation in a low traffic area and to monitor her there to see if that provided adequate accommodation.

[19] He observed that in March 2001 Fraser Milner had requested that Ms. Brewer provide a current assessment of her medical situation from one of the specialists the firm had suggested. He said, "The Complainant did not do so even though there appeared to be a change in her health condition since the last reports which were done in 1998 and 1999." He noted as well that Ms. Brewer's family doctor had indicated in his report that he had arranged for her to see a neurologist for an opinion regarding medications and other treatments but no report from a neurologist had ever been provided to Fraser Milner.

[20] The investigator concluded:

> The above information appears to indicate that the respondent was willing to accommodate Ms. Brewer's needs. On the other hand, the Complainant did not accept the offered position in Word Processing, nor did she provide a specialist's "current assessment" of her physical disability. Her reason for not doing so was

that the specialists' reports had already been provided previously, referring to Dr. Man's reports dated November 20, 1998, December 4, 1998 and February 5, 1999. Given the construction and age of the reports, it was not unreasonable for the respondent to request a "current assessment" of the Complainant's condition in order to evaluate the benefits associated with different remedial measures, and even more so with the brand new word processing post. There is also no indication that the Complainant's offer to provide a report from her own neurologist, someone not on the FMC list, was followed through by her.

The above evidence shows that the Complainant did not cooperate with the respondent's attempts to accommodate her when she did not provide a specialist's "current assessment"; and when she did not attempt to try out the word processing transfer before deciding that the transfer would not work. In his report of October 17, 2001, Dr. Hoffman stated that some of his recommendations were already in place. The respondent stated that not having a specialist's report "handicaps" their ability to evaluate the benefits associated with different remedial efforts. This could be the reason Dr. Hoffman's recommendations could not be implemented in their entirety. There is no evidence to show that the respondent refused to implement Dr. Hoffman's recommendations, but evidence shows that the respondent was still waiting for the Complainant's cooperation and her return to work. Finally the Complainant appears to have terminated the respondent's continuing attempts to accommodate her by going on short term disability leave and then applying for long-term disability benefits when her short term benefits ran out, thereby frustrating any possible attempts by the respondent to accommodate her to the point of undue hardship. The respondent stated that "if Ms. Brewer had reasonable basis for maintaining that she was eligible for long-term disability benefits, she would not have been fit to return to work".

Human rights law indicates that the employee cannot expect a perfect solution when attempts are made to accommodate the individual needing such. If a proposal that would be reasonable in all the circumstances is turned down, the employer's duty is discharged. The employee also has a responsibility to cooperate with the accommodation process. Evidence shows that the Complainant did not provide such cooperation. Evidence shows that the respondent had made reasonable attempts to accommodate the Complainant's physical disability and was prepared to continue doing so.

Recommendation

In the absence of evidence to show that the respondent failed in its duty to attempt to reasonably accommodate the Complainant to the point of undue hardship, there is no reasonable basis to proceed with the complaint. It is recommended that this complaint be dismissed.

[21] On June 18, 2004, the Director dismissed Ms. Brewer's complaint for the reasons given by the Investigator.

[22] Ms. Brewer applied to the Chief Commissioner for a review of the Director's dismissal of her complaint. On September 20, 2004, the Chief Commissioner upheld the dismissal. He said:

> Although MCS is a controversial disability issue it is important to note none of the reports submitted by Janice Brewer's physicians actually came up with a firm MCS diagnosis. Without such a diagnosis the respondents were in my view justified in rejecting her contention that she had a physical disability of this nature.
>
> The respondents did agree Janice Brewer suffered from chest tightness, light headaches, aches and other like problems while working for them. They however did not agree these symptoms amounted to a "physical disability" as defined under s. 44(1)(2) of the Act.
>
> Janice Brewer did not co-operate fully with the human rights investigator when she denied him direct access to her doctors. She also resisted requests made by the respondents for a further assessment of her condition by a specialist. A surveillance conducted in May 2002 by Manulife, the respondent's LTD underwriter brought into question how incapacitated and restricted she really was.
>
> Despite the lack of proof that Janice Brewer actually had a MCS physical disability the respondents did try over time to accommodate her based on her requests and the recommendations of her doctor.
>
> The steps taken by the respondent to address and alleviate Janice Brewer's environmental sensitivity as they understood it met their duty to accommodate. Janice Brewer for her part elected not to return to work when her STD ended in February 2002.
>
> I see no reasonable basis to advance this case to the panel hearing stage and hereby dismiss the appeal.

[23] Ms. Brewer seeks judicial review of that decision. The Alberta Court of Appeal has very recently considered the standard of review that is be to applied on an application for judicial review of a decision of the Chief Commissioner. In ***Callan v. Suncor Inc.*** 2006 ABCA 15, [2006] A.J. No. 30, the Court said: (para. 15)

> The parties are all in agreement that the standard of review of the decision of the Chief Commissioner is reasonableness *simpliciter*. When the Chief Commissioner decides to send or not send a complaint to a human rights panel, the standard of review is whether his decision to do so is reasonable or not.

> Therefore, if the referral decision of the Chief Commissioner stands up to a somewhat probing analysis, the reviewing court should not intervene: ***Law Society of New Brunswick v. Ryan*** [2003] 1 S.C.R. 247, at para. 55. If the Chief Commissioner is faced with a complaint that is bristling with issues of credibility and conflicts on the facts, it will in many cases be unreasonable for him not to refer the matter to a human rights panel. However, his decision should be assessed in light of its reasonableness, not based on any perceived distinction between assessing evidence and adjudicating.

[24] ***Callan*** happens also to be a case where the question was whether the employer had reasonably accommodated an employee who had a disability. On the nature of the duty to accommodate, the Court said: (para. 21)

> There is no duty of instant or perfect accommodation, only reasonable accommodation. The reasonableness of the employer's accommodation must be evaluated considering the knowledge of the employer, together with the cost, complexity and expense of any physical accommodation required, and other similar factors.

[25] In my view the reasoning of the Chief Commissioner does not stand up to "somewhat probing analysis". In my view the dismissal of Ms. Brewer's complaint at this stage was not reasonable.

[26] The Chief Commissioner's reasons address two issues: 1. Whether Ms. Brewer has a physical disability; and 2. Whether Fraser Milner's efforts to accommodate her were adequate.

Whether Ms. Brewer has a physical disability

[27] The Chief Commissioner appears to have concluded that the evidence did not support the conclusion that Ms. Brewer has a physical disability. He said, ". . . the respondents were in my view justified in rejecting the contention that she had a physical disability of this nature." His reasons were:

a) No physician provided a firm diagnosis of multiple chemical sensitivity.
b) Ms. Brewer denied the Investigator direct access to her doctors.
c) Ms. Brewer resisted Fraser Milner's request for a current specialist's assessment of her condition.
d) Surveillance of Ms. Brewer conducted by the insurer to whom she had applied for long term disability benefits brought into question how incapacitated and restricted she really was.

[28] The Act contains the following definition of physical disability in s. 44(1)(l):

> "physical disability" means any degree of physical disability, infirmity, malformation or disfigurement that is caused by bodily injury, birth defect or illness and, without limiting the generality of the foregoing, includes epilepsy, paralysis, amputation, lack of physical co-ordination, blindness or visual impediment, deafness or hearing impediment, muteness or speech impediment, and physical reliance on a guide dog, wheelchair or other remedial appliance or device.

No firm diagnosis

[29] In my view the Chief Commissioner gave inappropriate emphasis to the fact that the doctors who assessed Ms. Brewer's symptoms were unable to firmly diagnose her condition. A distinction should be drawn between the question of whether a disability exists and the question of whether medical science has a label for it or has determined its cause.

[30] In the evidence assessed by the Investigator and the Chief Commissioner, no one, other than the long term disability insurer, expressed doubt either that Ms. Brewer suffers from the symptoms she described or that they are triggered by exposure to perfumes, scents and other contaminants in the air of her office work space. Assessing the same evidence that the Chief Commissioner assessed, the Investigator concluded, ". . . the available evidence appears to indicate that the Complainant did suffer from symptoms of sensitivity to perfumes, fragrances and other chemical scents (e.g. paints).

[31] Dr. Chandler said:

> On no occasion in the past have I felt Janice to be overstating her problems, nor had cause to doubt the veracity of her claims. . . .
>
> Other physicians asked to evaluate and treat Janice have seemed to be similarly convinced of her legitimate complaints, and her psychiatric evaluation focussed solely on the physical condition and symptoms arising from it, without any indication of a primary psychiatric disorder.

[32] There may be a question as to whether Ms. Brewer's symptoms amount to a physical disability but the inability of doctors to put a label on the symptoms or to identify the cause of the condition (as opposed to the triggers of the symptoms) does not answer that question. The definition of "physical disability" in the Act does not exclude infirmities caused by illnesses which medical science does not yet fully understand.

Direct access to doctors

[33] The Chief Commissioner observed, "Janice Brewer did not co-operate fully with the human rights investigator when she denied him direct access to her doctors."

[34] In his report, the Investigator recorded, "Ms. Brewer did not consent to this Investigator directly contacting her physicians". During his investigation, on September 15, 2003, the Investigator, in a letter to Ms. Brewer's counsel, said, "If Ms. Brewer has no objections, I would like to talk to her doctors/specialists. Please forward letter of consent to enable me to do so." Ms. Brewer's counsel provided her response on October 14, 2003, "I do not consent at this time for HRC to contact my physicians directly. If further medical information is required, please let me know what and I will try to arrange obtaining it for you." The matter was not pursued further.

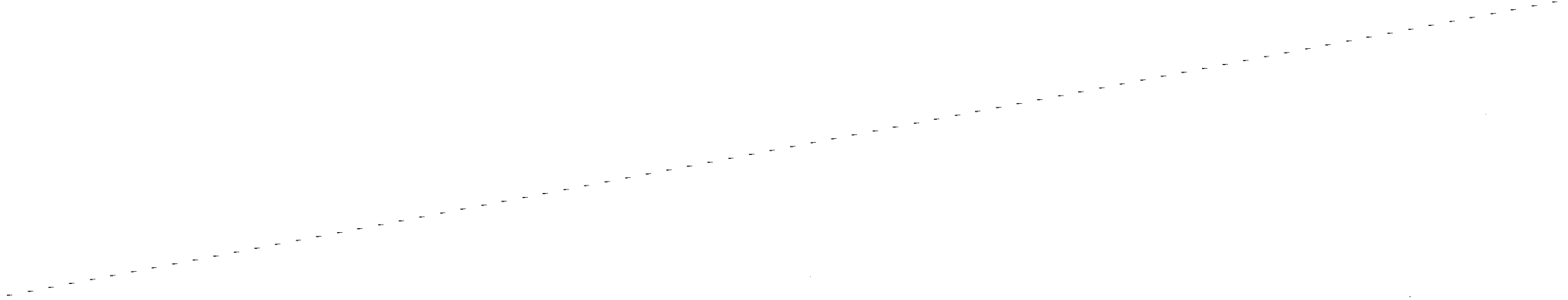
[35] Ms. Brewer's refusal to consent to the Investigator having direct contact with her physicians can only have significance if it justifies the drawing of an inference against the position she advances in her complaint – that she is physically disabled and requires reasonable accommodation. The Chief Commissioner's reasons suggest that he drew that inference.

[36] In my view the circumstances do not justify his doing so. There is a reasonable explanation for Ms. Brewer's denial of consent other than a wish to avoid revelation of information contrary to her position. The Investigator was seeking Ms. Brewer's consent to his speaking to her physicians about her condition without her being present. While it would not be unreasonable for the Investigator to speak directly to the physicians, it would, in my view, be unreasonable for him to expect consent to his doing so in Ms. Brewer's absence. If the Investigator had questions arising from the medical reports Ms. Brewer had submitted, it was reasonable for Ms. Brewer to want to be present herself, or to have her counsel present, when those questions were asked and the answers given. In these circumstances it was not appropriate to draw an adverse inference from her refusal to consent to direct exclusive access.

Request for a current specialist's assessment

[37] The Chief Commissioner placed weight on the fact that though Fraser Milner requested a current specialist's report on Ms. Brewer's condition, they were given only somewhat dated specialists' reports and a current report from Ms. Brewer's family doctor. In my view this point does not have the significance the Chief Commissioner attached to it.

[38] Fraser Milner's request for a current specialist report was made in March 2001. Though Mr. Wakeling expressed disappointment when the material provided by Ms. Brewer's counsel in August, 2001 did not include a current specialist assessment, he was nonetheless willing to proceed to have Dr. Hoffman assess Ms. Brewer's work space and make recommendations. Dr. Hoffman reported in October, 2001. Between then and February 2002, Ms. Brewer's counsel attempted unsuccessfully to have Fraser Milner implement some of Dr. Hoffman's recommendations. The question of the adequacy of the medical assessment materials provided in August was never again raised. If Fraser Milner thought that a current specialist's opinion as to Ms. Brewer's condition would be helpful in assessing Dr. Hoffman's recommendations, they never said so. There was no further request for a specialist assessment.



[39] Further, if the lack of a current specialist's assessment of Ms. Brewer's condition was significant at the time of his investigation, one might expect the Investigator to have asked for one. He did not. He was able to conclude that Ms. Brewer suffers from symptoms which give Fraser Milner a duty to reasonably accommodate her without any further medical evidence.

Surveillance Evidence

[40] In concluding that Ms. Brewer did not have a physical disability, the Chief Commissioner observed, "A surveillance conducted in May 2002 by Manulife, the Respondent's LTD underwriter brought into question how incapacitated and restricted she really was."

[41] The information in the record in relation to the surveillance was contained in a letter from Manulife Financial to Ms. Brewer dated June 28, 2002, denying her long term disability claim. Ms. Brewer's counsel provided a copy of that letter to the Investigator in response to his inquiry as to the reason the LTD claim had been denied. The letter said:

> Furthermore, between May 21 and May 24, 2002, you were observed in uncontrolled public places such as food stores, upholstery shop, public library, public park, Interac Bank machine, private clinic, video store with no apparent restrictions. Based on the information we have on file, we have determined, that we do not have sufficient medical evidence documenting how your illness causes restrictions or lack of ability such that you are prevented from performing the essential duties of your own occupation in a fairly controlled environment, when you were observed to have the ability to shop in food store and be in uncontrolled environment without restriction. As such, your claim for Long Term Disability and Waiver of Premium benefits is declined.

[42] The record also includes Ms. Khullar's response to Manulife on the subject of the surveillance. In her letter appealing the denial of LTD benefits, Ms. Khullar said:

> Manulife's quest for "objective evidence" has lead it to conduct four days of surveillance of her activity. Please provide us with a copy of the surveillance video and surveillance reports. To the extent the content of the surveillance is reflected in Manulife's letter of June 28, 2002, we note that the surveillance evidence is consistent with what Ms. Brewer had previously advised Manulife in the activities of daily living questionnaire that she was required to complete and did complete on May 27th, 2002. In that questionnaire she responded "yes" to the question "do you shop" and explained in response to the question "what kinds of shopping do you do" that she shopped for food and clothing. In her attached comments to the questionnaire she explained that she does "some" shopping by telephone and catalogue services. For grocery shopping, and some personal shopping, she attends at stores but tries to do it at non-peak hours. She states that sometimes she gets sick when she does so but sometimes she is able to attend.

> Your report of the surveillance video is consistent with Ms. Brewer's self-reporting of her activities. Confirming that Ms. Brewer goes shopping on an occasional basis through surveillance, is completely irrelevant to the issue of whether she can work for 8 hours a day as a legal secretary.

[43] The information available to the Chief Commissioner concerning the Manulife surveillance did not alone, or in combination with other evidence, justify the conclusion that Ms. Brewer is not physically disabled. That information was a second hand summary of the observations of whoever conducted the surveillance and reported on it to the author of Manulife's June 28 letter. The Chief Commissioner was not in a position to make his own assessment of the significance of that evidence. The Investigator had not spoken to whoever conducted the surveillance or the author of the summary of it. Indeed the Investigator did not mention the surveillance in his report. In these circumstances, for the Chief Commissioner to place significant weight on the Manulife surveillance, which his mention of it in his reasons suggests he did, was unreasonable.

Whether Fraser Milner's efforts to accommodate Ms. Brewer were adequate

[44] The Chief Commissioner observed that Fraser Milner tried to accommodate Ms. Brewer "based on her requests and the recommendations of her doctor." He concluded, "The steps taken by the respondent to address and alleviate Janice Brewer's environmental sensitivity as they understood it met their duty to accommodate." He did not set out the analysis which lead him to that conclusion.

[45] There is no dispute that Fraser Milner did take significant steps to accommodate Ms. Brewer prior to 2001. But it appears that despite those steps, Ms. Brewer's symptoms continued to be triggered in the office environment. This lead her and her counsel to propose an assessment by Dr. Hoffman in order to determine if further reasonable steps to accommodate her might be taken. Fraser Milner agreed to that proposal. Dr. Hoffman inspected Ms. Brewer's work space and made specific recommendations. Ms. Brewer requested that some of them be implemented.

[46] Prior to any progress being made on the implementation of Dr. Hoffman's recommendations Ms. Brewer was moved to a newly renovated work space where her symptoms were significantly worse. She left work after only 2 days in this new environment.

[47] Without taking any position on the reasonableness of Dr. Hoffman's recommendations, and without responding to Ms. Brewer's request that some of them be implemented, and without any further consultation with Ms. Brewer, Fraser Milner determined that her work assignment would be changed. There was some prospect that in this new position, the triggers thought to cause her symptoms would be reduced. However, Fraser Milner expected Ms. Brewer to return to work to try out the environment that accompanied the new assignment without any prior assessment being obtained as to whether the move would be a reasonable substitute for the measures Dr. Hoffman had recommended.

[48] Fraser Milner appears to have abandoned the course of action to which Mr. Wakeling had agreed in September, 2001. They had facilitated Dr. Hoffman's inspection. Presumably they paid for one half of its cost as they had agreed to do. But after the recommendations were communicated to them they appear to have completely ignored them. They did not take the position that the recommended steps were unreasonable either for being too costly or for any other reason. They simply did not respond. Rather they directed that a different course of action be taken in the hope that it would be sufficient. To expect Ms. Brewer to participate in this experiment when there had been no satisfactory conclusion to the course of action previously agreed, and no explanation as to why Fraser Milner was abandoning that course of action, was unreasonable. So was characterizing her reaction uncooperative.

[49] In these circumstances, the conclusion that Fraser Milner reasonably accommodated Ms. Brewer was unreasonable. I therefore grant the application and quash the decision of the Chief Commissioner.

Heard on the 15th day of December 2005.
Dated at the City of Edmonton, Alberta this 7th day of April 2006.

Brian R. Burrows
J.C.Q.B.A.

Appearances:

John R. Carpenter
Chivers Carpenter
for the Applicant

Walter Pavlic
Parlee McLaws
for Fraser Milner Casgrain LLP

Audrey Dean
for the Alberta Human Rights & Citizenship Commission

Court of Queen's Bench of Alberta

Citation: Brewer v. Fraser Milner Casgrain LLP, 2006 ABQB 258

Date: 20060407
Docket: 0503 05118
Registry: Edmonton

IN THE MATTER OF THE HUMAN RIGHTS, CITIZENSHIP AND MULTICULTURALISM ACT, R.S.A. 2000, C. H-14

AND IN THE MATTER OF THE DECISION OF THE CHIEF COMMISSIONER OF THE ALBERTA HUMAN RIGHTS AND CITIZENSHIP COMMISSION MADE ON SEPTEMBER 20, 2004 CONCLUDING THAT THE RESPONDENT FRASER MILNER CASGRAIN LLP &/or FMC SERVICES LIMITED PARTNERSHIP DID NOT DISCRIMINATE AGAINST THE APPLICANT ON THE GROUND OF PHYSICAL DISABILITY CONTRARY TO S. 7(1) OF THE HUMAN RIGHTS, CITIZENSHIP AND MULTI-CULTURALISM ACT.

Between:

Janice Brewer

Applicant

- and -

Fraser Milner Casgrain LLP
&/or FMC Services Limited Partnership
and the Chief Commissioner of
the Alberta Human Rights and Citizenship Commission

Respondents

Correction: A correction was issued on April 19, 2006. In the Reasons for Judgment issued April 7, 2006 the name Ritu Khullar was misspelled. The error is corrected in these Reasons for Judgment.

Reasons for Judgment
of the
Honourable Mr. Justice Brian R. Burrows

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[1] Janice Brewer seeks judicial review of the decision of the Chief Commissioner of the Alberta Human Rights and Citizenship Commission dismissing her complaint that her employer, Fraser Milner Casgrain LLP, discriminated against her on the ground of a physical disability. Ms. Brewer's complaint was that Fraser Milner Casgrain failed to reasonably accommodate her physical disability.

[2] Ms. Brewer was employed by Fraser Milner as a legal secretary starting in 1981. In 1998 she sought medical attention for an asthma-like condition. Exposure to specific triggers in the environment such as scents and perfumes would set off a constellation of symptoms including dyspnea (laboured breathing), chest tightness, lightheadedness, headache, rashes, dizziness and disorientation. Ms. Brewer's doctor suspected Ms. Brewer had multiple chemical sensitivities which her family doctor described as, ". . . a poorly understood and controversial diagnosis with no known solution apart from avoidance of the offending irritants".

[3] Fraser Milner asked its staff to refrain from the use of perfumes and fragrances to help Ms. Brewer avoid triggers. The lawyer to whom she was assigned altered the grooming products he used for the same purpose. Ms. Brewer was permitted to use a washroom in the office sick room, rather than the public washroom. Air cleaners were placed in the area in which she worked. She was allowed to use charcoal filtered disposable air masks when necessary. Her work hours were changed slightly so she would arrive at and leave the office later than most of the other employees and thereby avoid contact with crowds.

[4] It appears that these measures did not entirely resolve the problem. In 2001 Ms. Brewer's lawyer, Ms. Ritu Khullar, contacted a partner at Fraser Milner, Tom Wakeling, to discuss further measures that might be taken. Mr. Wakeling suggested that a report concerning Ms. Brewer's condition be obtained from a respiratory specialist. He provided a list of possible specialists who could be consulted. He expected this would assist in determining whether any further reasonable accommodation would be required or possible.

[5] Ms. Khullar provided letters from Ms. Brewer's family physician, Dr. Chandler, from an asthma specialist who had investigated her problem initially, and, from Dr. H. E. Hoffman, a specialist in occupational and environmental medicine. The asthma specialist, Dr. Paul Man, was one of the specialists Mr. Wakeling had suggested.

[6] Mr. Wakeling expressed disappointment that the report from the specialist was not current (it was more than 2 years old). Without conceding that Ms. Brewer had a "medical illness, disease or physical disorder", Mr. Wakeling agreed that Dr. Hoffman could visit Fraser Milner's offices to determine whether any changes could be made to assist Ms. Brewer. It was agreed that the cost of Dr. Hoffman's assessment would be shared by Ms. Brewer and Fraser Milner.

[7] In October 2001 Dr. Hoffman reported his findings and recommendations. He said:

[Ms. Brewer's] symptoms can be minimized by the following actions:

1. Minimize people traffic near her

    a. Locate her desk away from high traffic areas.

    b. Locate her desk away from a boardroom or meeting room.

    c. Locate her desk away from a people traffic conduit.

2. Minimize chemicals in the workplace

    a. Provide a policy for all staff to use minimal scented products. This will require some mechanism of education, reinforcement, and reporting of breaks in policy. An occupational health program at this workplace (as described below) could facilitate this activity.

    b. Provide several types of meeting rooms for clients near the main reception area, so that clients are not required to go through the whole office area.

    c. Review cleaning materials and procedures.

3. Control chemical exposure

    a. Engineering Controls

        i. Barriers

            1. Provide a plexiglass barrier to separate Ms. Brewer's workstation from the traffic flow areas.

        ii. Ventilation

            1. Maintain adequate general ventilation in floor.

            2. Optimize local ventilation over Ms. Brewer's workstation. Airflow directly over Ms. Brewer's work area could be increased. This would provide direction of airflow to her workstation and then away from the workstation. This would allow chemicals and fragrances to be dispersed away from her workstation. An example of this change in local air intake is the photocopier room, where the

airflow in the photocopier room has been specifically increased for the operational demands of the photocopier. Similarly, local ventilation over Ms. Brewer's workstation could be increased to meet the operational demands (health requirements) of Ms. Brewer. This balancing of the air flow requires very little cost. Essentially, the airflow for the floor needs to be adjusted, with no requirement for special equipment.

iii. Local air cleaners, as she has been using already at her desk.

b. Administrative controls

i. Enable Ms. Brewer to work hours that minimize symptoms.

ii. Enable Ms. Brewer to take some work home for days that she cannot tolerate the workplace environment.

iii. Ensure that staff assigned to work within a close physical proximity to Ms. Brewer understand and respect her health condition, or alternatively ensure that no staff are assigned to work within a close physical proximity.

c. Respiratory protective equipment (RPE) can be used where symptoms occur. Ms. Brewer may use a disposable charcoal mask for RPE. The employer should supply RPE. RPE is a last resort at protection from chemicals, as other controls are recommended.

4. Minimize requirement for Ms. Brewer to need to leave her work station:

a. Equip her work station with more equipment:

i. Printer

ii. Fax

iii. Copier

b. Coordinate deliveries so that she does not need to go to mail room.
c. Delegate large photocopying work to an office aide.

[8] Dr. Hoffman acknowledged that some of these suggestions had already been implemented in an *ad hoc* way, but proposed that a more systematic approach to addressing all of the areas he had identified be undertaken. He observed, "No steps can entirely eliminate the risk and exposures, but they can be effectively minimized and controlled". His report also addressed the question of the cost of the steps he proposed. He did not think the costs would be unreasonable.

[9] Ms. Brewer's lawyer forwarded Dr. Hoffman's report to Mr. Wakeling and requested that four of his suggestions in particular be implemented:

1. Minimizing people traffic near Ms. Brewer by the location of her desk away from high traffic areas, boardrooms or meeting rooms, or people traffic conduit.

2. Provide a barrier to separate Ms. Brewer's workstation from the traffic flow areas.

3. Maintaining adequate general ventilation and optimizing local ventilation around workstations.

4. Minimizing the requirement for Ms. Brewer to need to leave her workstation by equipping her workstation with a printer/fax/copier capabilities.

[10] At the time Dr. Hoffman visited Fraser Milner, Ms. Brewer's workstation was located on the 29th floor. The 30th floor was under renovations and when they were done Ms. Brewer's workstation was relocated there. She moved to her 30th floor workstation on November 12, 2001. She found that her symptoms became worse and attributed this to the paints, glues and carpeting that had been used in the renovations. She informed Fraser Milner of this aggravation of her condition. She left work on November 14, 2001.

[11] There was one accommodation previously provided that was not available on the 30th floor. Ms. Brewer would have to use the public washroom. Ms. Khullar wrote Mr. Wakeling to advise that this would have an adverse effect on Ms. Brewer and to request that the accommodation of a separate washroom be continued.

[12] On December 11, 2001 Ms. Khullar observed in a letter to Mr. Wakeling that there had been no reply to her requests for implementation of some of Dr. Hoffman's recommendations, or to her request regarding the washroom accommodation. She said that Ms. Brewer had encountered significant difficulty in her new 30th floor work space and for that reason had left work and applied for short term disability.

[13] On December 14, 2001, Ms. Brewer was advised that her work assignment would be changed. She would no longer work with the lawyer with whom she had worked for 13 years

but would be assigned to do word processing at a work station where she would have reduced contact with other people. She was also advised that it was not possible to continue the washroom accommodation to her on the 30th floor because the only washroom on that floor was the public washroom.

[14] On January 14, 2002 Ms. Khullar inquired as to Fraser Milner's intentions regarding implementation of Dr. Hoffman's recommendations and whether Fraser Milner was prepared to arrange to have non-fragrant soap and non-fragrant cleaners used in the 30th floor washroom.

[15] Mr. Wakeling responded on January 25, 2002. He said that Ms. Brewer would be assigned to a workstation in the word processing area and her ability to work in that environment would be monitored. There was no response to Ms. Khullar's inquiry as to Fraser Milner's intentions regarding Dr. Hoffman's recommendations.

[16] Ms. Brewer did not return to work. After leaving work on November 14, 2001 she went on short term disability. Later she applied for long term disability but her application was unsuccessful.

[17] On October 17, 2002 she filed a complaint with the Alberta Human Rights and Citizenship Commission. A Human Rights Officer investigated and issued an Investigation Report on June 18, 2004. After summarizing the information he gathered in his investigation, the Investigator considered whether Fraser Milner made reasonable attempts to accommodate Ms. Brewer's physical disability.

[18] He noted the steps Fraser Milner had taken prior to Dr. Hoffman's recommendation to accommodate Ms. Brewer's situation. I described these in paragraph [3] above. He also summarized the steps Fraser Milner had planned for accommodating Ms. Brewer after her move to the renovated 30th floor. These were to assign her to a word processing workstation in a low traffic area and to monitor her there to see if that provided adequate accommodation.

[19] He observed that in March 2001 Fraser Milner had requested that Ms. Brewer provide a current assessment of her medical situation from one of the specialists the firm had suggested. He said, "The Complainant did not do so even though there appeared to be a change in her health condition since the last reports which were done in 1998 and 1999." He noted as well that Ms. Brewer's family doctor had indicated in his report that he had arranged for her to see a neurologist for an opinion regarding medications and other treatments but no report from a neurologist had ever been provided to Fraser Milner.

[20] The investigator concluded:

> The above information appears to indicate that the respondent was willing to accommodate Ms. Brewer's needs. On the other hand, the Complainant did not accept the offered position in Word Processing, nor did she provide a specialist's "current assessment" of her physical disability. Her reason for not doing so was

that the specialists' reports had already been provided previously, referring to Dr. Man's reports dated November 20, 1998, December 4, 1998 and February 5, 1999. Given the construction and age of the reports, it was not unreasonable for the respondent to request a "current assessment" of the Complainant's condition in order to evaluate the benefits associated with different remedial measures, and even more so with the brand new word processing post. There is also no indication that the Complainant's offer to provide a report from her own neurologist, someone not on the FMC list, was followed through by her.

The above evidence shows that the Complainant did not cooperate with the respondent's attempts to accommodate her when she did not provide a specialist's "current assessment"; and when she did not attempt to try out the word processing transfer before deciding that the transfer would not work. In his report of October 17, 2001, Dr. Hoffman stated that some of his recommendations were already in place. The respondent stated that not having a specialist's report "handicaps" their ability to evaluate the benefits associated with different remedial efforts. This could be the reason Dr. Hoffman's recommendations could not be implemented in their entirety. There is no evidence to show that the respondent refused to implement Dr. Hoffman's recommendations, but evidence shows that the respondent was still waiting for the Complainant's cooperation and her return to work. Finally the Complainant appears to have terminated the respondent's continuing attempts to accommodate her by going on short term disability leave and then applying for long-term disability benefits when her short term benefits ran out, thereby frustrating any possible attempts by the respondent to accommodate her to the point of undue hardship. The respondent stated that "if Ms. Brewer had reasonable basis for maintaining that she was eligible for long-term disability benefits, she would not have been fit to return to work".

Human rights law indicates that the employee cannot expect a perfect solution when attempts are made to accommodate the individual needing such. If a proposal that would be reasonable in all the circumstances is turned down, the employer's duty is discharged. The employee also has a responsibility to cooperate with the accommodation process. Evidence shows that the Complainant did not provide such cooperation. Evidence shows that the respondent had made reasonable attempts to accommodate the Complainant's physical disability and was prepared to continue doing so.

Recommendation

In the absence of evidence to show that the respondent failed in its duty to attempt to reasonably accommodate the Complainant to the point of undue hardship, there is no reasonable basis to proceed with the complaint. It is recommended that this complaint be dismissed.

[21] On June 18, 2004, the Director dismissed Ms. Brewer's complaint for the reasons given by the Investigator.

[22] Ms. Brewer applied to the Chief Commissioner for a review of the Director's dismissal of her complaint. On September 20, 2004, the Chief Commissioner upheld the dismissal. He said:

> Although MCS is a controversial disability issue it is important to note none of the reports submitted by Janice Brewer's physicians actually came up with a firm MCS diagnosis. Without such a diagnosis the respondents were in my view justified in rejecting her contention that she had a physical disability of this nature.
>
> The respondents did agree Janice Brewer suffered from chest tightness, light headaches, aches and other like problems while working for them. They however did not agree these symptoms amounted to a "physical disability" as defined under s. 44(1)(2) of the Act.
>
> Janice Brewer did not co-operate fully with the human rights investigator when she denied him direct access to her doctors. She also resisted requests made by the respondents for a further assessment of her condition by a specialist. A surveillance conducted in May 2002 by Manulife, the respondent's LTD underwriter brought into question how incapacitated and restricted she really was.
>
> Despite the lack of proof that Janice Brewer actually had a MCS physical disability the respondents did try over time to accommodate her based on her requests and the recommendations of her doctor.
>
> The steps taken by the respondent to address and alleviate Janice Brewer's environmental sensitivity as they understood it met their duty to accommodate. Janice Brewer for her part elected not to return to work when her STD ended in February 2002.
>
> I see no reasonable basis to advance this case to the panel hearing stage and hereby dismiss the appeal.

[23] Ms. Brewer seeks judicial review of that decision. The Alberta Court of Appeal has very recently considered the standard of review that is be to applied on an application for judicial review of a decision of the Chief Commissioner. In ***Callan v. Suncor Inc.*** 2006 ABCA 15, [2006] A.J. No. 30, the Court said: (para. 15)

> The parties are all in agreement that the standard of review of the decision of the Chief Commissioner is reasonableness *simpliciter*. When the Chief Commissioner decides to send or not send a complaint to a human rights panel, the standard of review is whether his decision to do so is reasonable or not.

> Therefore, if the referral decision of the Chief Commissioner stands up to a somewhat probing analysis, the reviewing court should not intervene: ***Law Society of New Brunswick v. Ryan*** [2003] 1 S.C.R. 247, at para. 55. If the Chief Commissioner is faced with a complaint that is bristling with issues of credibility and conflicts on the facts, it will in many cases be unreasonable for him not to refer the matter to a human rights panel. However, his decision should be assessed in light of its reasonableness, not based on any perceived distinction between assessing evidence and adjudicating.

[24] ***Callan*** happens also to be a case where the question was whether the employer had reasonably accommodated an employee who had a disability. On the nature of the duty to accommodate, the Court said: (para. 21)

> There is no duty of instant or perfect accommodation, only reasonable accommodation. The reasonableness of the employer's accommodation must be evaluated considering the knowledge of the employer, together with the cost, complexity and expense of any physical accommodation required, and other similar factors.

[25] In my view the reasoning of the Chief Commissioner does not stand up to "somewhat probing analysis". In my view the dismissal of Ms. Brewer's complaint at this stage was not reasonable.

[26] The Chief Commissioner's reasons address two issues: 1. Whether Ms. Brewer has a physical disability; and 2. Whether Fraser Milner's efforts to accommodate her were adequate.

Whether Ms. Brewer has a physical disability

[27] The Chief Commissioner appears to have concluded that the evidence did not support the conclusion that Ms. Brewer has a physical disability. He said, ". . . the respondents were in my view justified in rejecting the contention that she had a physical disability of this nature." His reasons were:

a) No physician provided a firm diagnosis of multiple chemical sensitivity.
b) Ms. Brewer denied the Investigator direct access to her doctors.
c) Ms. Brewer resisted Fraser Milner's request for a current specialist's assessment of her condition.
d) Surveillance of Ms. Brewer conducted by the insurer to whom she had applied for long term disability benefits brought into question how incapacitated and restricted she really was.

[28] The Act contains the following definition of physical disability in s. 44(1)(l):

> "physical disability" means any degree of physical disability, infirmity, malformation or disfigurement that is caused by bodily injury, birth defect or illness and, without limiting the generality of the foregoing, includes epilepsy, paralysis, amputation, lack of physical co-ordination, blindness or visual impediment, deafness or hearing impediment, muteness or speech impediment, and physical reliance on a guide dog, wheelchair or other remedial appliance or device.

No firm diagnosis

[29] In my view the Chief Commissioner gave inappropriate emphasis to the fact that the doctors who assessed Ms. Brewer's symptoms were unable to firmly diagnose her condition. A distinction should be drawn between the question of whether a disability exists and the question of whether medical science has a label for it or has determined its cause.

[30] In the evidence assessed by the Investigator and the Chief Commissioner, no one, other than the long term disability insurer, expressed doubt either that Ms. Brewer suffers from the symptoms she described or that they are triggered by exposure to perfumes, scents and other contaminants in the air of her office work space. Assessing the same evidence that the Chief Commissioner assessed, the Investigator concluded, ". . . the available evidence appears to indicate that the Complainant did suffer from symptoms of sensitivity to perfumes, fragrances and other chemical scents (e.g. paints).

[31] Dr. Chandler said:

> On no occasion in the past have I felt Janice to be overstating her problems, nor had cause to doubt the veracity of her claims. . . .
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> Other physicians asked to evaluate and treat Janice have seemed to be similarly convinced of her legitimate complaints, and her psychiatric evaluation focussed solely on the physical condition and symptoms arising from it, without any indication of a primary psychiatric disorder.

[32] There may be a question as to whether Ms. Brewer's symptoms amount to a physical disability but the inability of doctors to put a label on the symptoms or to identify the cause of the condition (as opposed to the triggers of the symptoms) does not answer that question. The definition of "physical disability" in the Act does not exclude infirmities caused by illnesses which medical science does not yet fully understand.

Direct access to doctors

[33] The Chief Commissioner observed, "Janice Brewer did not co-operate fully with the human rights investigator when she denied him direct access to her doctors."

[34] In his report, the Investigator recorded, "Ms. Brewer did not consent to this Investigator directly contacting her physicians". During his investigation, on September 15, 2003, the Investigator, in a letter to Ms. Brewer's counsel, said, "If Ms. Brewer has no objections, I would like to talk to her doctors/specialists. Please forward letter of consent to enable me to do so." Ms. Brewer's counsel provided her response on October 14, 2003, "I do not consent at this time for HRC to contact my physicians directly. If further medical information is required, please let me know what and I will try to arrange obtaining it for you." The matter was not pursued further.

[35] Ms. Brewer's refusal to consent to the Investigator having direct contact with her physicians can only have significance if it justifies the drawing of an inference against the position she advances in her complaint – that she is physically disabled and requires reasonable accommodation. The Chief Commissioner's reasons suggest that he drew that inference.

[36] In my view the circumstances do not justify his doing so. There is a reasonable explanation for Ms. Brewer's denial of consent other than a wish to avoid revelation of information contrary to her position. The Investigator was seeking Ms. Brewer's consent to his speaking to her physicians about her condition without her being present. While it would not be unreasonable for the Investigator to speak directly to the physicians, it would, in my view, be unreasonable for him to expect consent to his doing so in Ms. Brewer's absence. If the Investigator had questions arising from the medical reports Ms. Brewer had submitted, it was reasonable for Ms. Brewer to want to be present herself, or to have her counsel present, when those questions were asked and the answers given. In these circumstances it was not appropriate to draw an adverse inference from her refusal to consent to direct exclusive access.

Request for a current specialist's assessment

[37] The Chief Commissioner placed weight on the fact that though Fraser Milner requested a current specialist's report on Ms. Brewer's condition, they were given only somewhat dated specialists' reports and a current report from Ms. Brewer's family doctor. In my view this point does not have the significance the Chief Commissioner attached to it.

[38] Fraser Milner's request for a current specialist report was made in March 2001. Though Mr. Wakeling expressed disappointment when the material provided by Ms. Brewer's counsel in August, 2001 did not include a current specialist assessment, he was nonetheless willing to proceed to have Dr. Hoffman assess Ms. Brewer's work space and make recommendations. Dr. Hoffman reported in October, 2001. Between then and February 2002, Ms. Brewer's counsel attempted unsuccessfully to have Fraser Milner implement some of Dr. Hoffman's recommendations. The question of the adequacy of the medical assessment materials provided in August was never again raised. If Fraser Milner thought that a current specialist's opinion as to Ms. Brewer's condition would be helpful in assessing Dr. Hoffman's recommendations, they never said so. There was no further request for a specialist assessment.

[39] Further, if the lack of a current specialist's assessment of Ms. Brewer's condition was significant at the time of his investigation, one might expect the Investigator to have asked for one. He did not. He was able to conclude that Ms. Brewer suffers from symptoms which give Fraser Milner a duty to reasonably accommodate her without any further medical evidence.

Surveillance Evidence

[40] In concluding that Ms. Brewer did not have a physical disability, the Chief Commissioner observed, "A surveillance conducted in May 2002 by Manulife, the Respondent's LTD underwriter brought into question how incapacitated and restricted she really was."

[41] The information in the record in relation to the surveillance was contained in a letter from Manulife Financial to Ms. Brewer dated June 28, 2002, denying her long term disability claim. Ms. Brewer's counsel provided a copy of that letter to the Investigator in response to his inquiry as to the reason the LTD claim had been denied. The letter said:

> Furthermore, between May 21 and May 24, 2002, you were observed in uncontrolled public places such as food stores, upholstery shop, public library, public park, Interac Bank machine, private clinic, video store with no apparent restrictions. Based on the information we have on file, we have determined, that we do not have sufficient medical evidence documenting how your illness causes restrictions or lack of ability such that you are prevented from performing the essential duties of your own occupation in a fairly controlled environment, when you were observed to have the ability to shop in food store and be in uncontrolled environment without restriction. As such, your claim for Long Term Disability and Waiver of Premium benefits is declined.

[42] The record also includes Ms. Khullar's response to Manulife on the subject of the surveillance. In her letter appealing the denial of LTD benefits, Ms. Khullar said:

> Manulife's quest for "objective evidence" has lead it to conduct four days of surveillance of her activity. Please provide us with a copy of the surveillance video and surveillance reports. To the extent the content of the surveillance is reflected in Manulife's letter of June 28, 2002, we note that the surveillance evidence is consistent with what Ms. Brewer had previously advised Manulife in the activities of daily living questionnaire that she was required to complete and did complete on May 27th, 2002. In that questionnaire she responded "yes" to the question "do you shop" and explained in response to the question "what kinds of shopping do you do" that she shopped for food and clothing. In her attached comments to the questionnaire she explained that she does "some" shopping by telephone and catalogue services. For grocery shopping, and some personal shopping, she attends at stores but tries to do it at non-peak hours. She states that sometimes she gets sick when she does so but sometimes she is able to attend.

> Your report of the surveillance video is consistent with Ms. Brewer's self-reporting of her activities. Confirming that Ms. Brewer goes shopping on an occasional basis through surveillance, is completely irrelevant to the issue of whether she can work for 8 hours a day as a legal secretary.

[43] The information available to the Chief Commissioner concerning the Manulife surveillance did not alone, or in combination with other evidence, justify the conclusion that Ms. Brewer is not physically disabled. That information was a second hand summary of the observations of whoever conducted the surveillance and reported on it to the author of Manulife's June 28 letter. The Chief Commissioner was not in a position to make his own assessment of the significance of that evidence. The Investigator had not spoken to whoever conducted the surveillance or the author of the summary of it. Indeed the Investigator did not mention the surveillance in his report. In these circumstances, for the Chief Commissioner to place significant weight on the Manulife surveillance, which his mention of it in his reasons suggests he did, was unreasonable.

Whether Fraser Milner's efforts to accommodate Ms. Brewer were adequate

[44] The Chief Commissioner observed that Fraser Milner tried to accommodate Ms. Brewer "based on her requests and the recommendations of her doctor." He concluded, "The steps taken by the respondent to address and alleviate Janice Brewer's environmental sensitivity as they understood it met their duty to accommodate." He did not set out the analysis which lead him to that conclusion.

[45] There is no dispute that Fraser Milner did take significant steps to accommodate Ms. Brewer prior to 2001. But it appears that despite those steps, Ms. Brewer's symptoms continued to be triggered in the office environment. This lead her and her counsel to propose an assessment by Dr. Hoffman in order to determine if further reasonable steps to accommodate her might be taken. Fraser Milner agreed to that proposal. Dr. Hoffman inspected Ms. Brewer's work space and made specific recommendations. Ms. Brewer requested that some of them be implemented.

[46] Prior to any progress being made on the implementation of Dr. Hoffman's recommendations Ms. Brewer was moved to a newly renovated work space where her symptoms were significantly worse. She left work after only 2 days in this new environment.

[47] Without taking any position on the reasonableness of Dr. Hoffman's recommendations, and without responding to Ms. Brewer's request that some of them be implemented, and without any further consultation with Ms. Brewer, Fraser Milner determined that her work assignment would be changed. There was some prospect that in this new position, the triggers thought to cause her symptoms would be reduced. However, Fraser Milner expected Ms. Brewer to return to work to try out the environment that accompanied the new assignment without any prior assessment being obtained as to whether the move would be a reasonable substitute for the measures Dr. Hoffman had recommended.

[48] Fraser Milner appears to have abandoned the course of action to which Mr. Wakeling had agreed in September, 2001. They had facilitated Dr. Hoffman's inspection. Presumably they paid for one half of its cost as they had agreed to do. But after the recommendations were communicated to them they appear to have completely ignored them. They did not take the position that the recommended steps were unreasonable either for being too costly or for any other reason. They simply did not respond. Rather they directed that a different course of action be taken in the hope that it would be sufficient. To expect Ms. Brewer to participate in this experiment when there had been no satisfactory conclusion to the course of action previously agreed, and no explanation as to why Fraser Milner was abandoning that course of action, was unreasonable. So was characterizing her reaction uncooperative.

[49] In these circumstances, the conclusion that Fraser Milner reasonably accommodated Ms. Brewer was unreasonable. I therefore grant the application and quash the decision of the Chief Commissioner.

Heard on the 15th day of December 2005.
Dated at the City of Edmonton, Alberta this 7th day of April 2006.

Brian R. Burrows
J.C.Q.B.A.

Appearances:

John R. Carpenter
Chivers Carpenter
for the Applicant

Walter Pavlic
Parlee McLaws
for Fraser Milner Casgrain LLP

Audrey Dean
for the Alberta Human Rights & Citizenship Commission

Policy on Environmental Sensitivities

Individuals with environmental sensitivities experience a variety of adverse reactions to environmental agents at concentrations well below those that might affect the "average person". This medical condition is a disability and those living with environmental sensitivities are entitled to the protection of the *Canadian Human Rights Act*, which prohibits discrimination on the basis of disability. The Canadian Human Rights Commission will receive any inquiry and process any complaint from any person who believes that he or she has been discriminated against because of an environmental sensitivity. Like others with a disability, those with environmental sensitivities are required by law to be accommodated.

The CHRC encourages employers and service providers to proactively address issues of accommodation by ensuring that their workplaces and facilities are accessible for persons with a wide range of disabilities.

Successful accommodation for persons with environmental sensitivities requires innovative strategies to minimize or eliminate exposure to triggers in the environment. These may include: developing and enforcing fragrance free and chemical avoidance policies, undertaking educational programs to increase voluntary compliance with such policies, minimizing chemical use and purchasing less toxic products, and notifying employees and clients in advance of construction, re-modeling and cleaning activities. Such measures can prevent injuries and illnesses, and reduce costs and health and safety risks.

For further information on environmental sensitivities, visit the following Commission publications:

The Medical Perspective on Environmental Sensitivities

Accommodation for Environmental Sensitivities: Legal Perspective

Policy approved by the Commission on June 15, 2007.

Canadian Human Rights Commission
Commission canadienne des droits de la personne

Accommodation for Environmental Sensitivities: Legal Perspective

By: Cara Wilkie and David Baker

Aussi offert en français sous le titre *La prise de mesures d'adaptation dans les cas d'hypersensibilités environnementales : le point de vue juridique*

Accommodation for Environmental Sensitivities: Legal Perspective

By: Cara Wilkie and David Baker

Abstract

Environmental sensitivities are a group of poorly understood medical conditions that cause people to react adversely to environmental triggers. The Canadian Human Rights Commission commissioned this report, in which the researchers seek to establish the status of the issues related to environmental sensitivities from a legal perspective and as these relate to the protection of human rights. The researchers examined case law, consulted experts and examined secondary sources on accommodation of people with environmental sensitivities in Canada, the United States, Australia, New Zealand and the United Kingdom, in order to answer several questions in the Canadian context: What is the status of the case law in these jurisdictions? Do building codes act as barriers to people with environmental sensitivities? What best practices emerge from the case law? How are conflicting interests reconciled? How can third parties be involved in the accommodation process? Where is the threshold of undue hardship? How are conflicts regarding accommodation preferences resolved?

Accommodation for Environmental Sensitivities: Legal Perspective

By: Cara Wilkie and David Baker

Executive Summary and Recommendations

The Canadian Human Rights Commission commissioned this research project to examine past legal assessments of accommodation for environmental sensitivities, including how third parties may be involved and the relevance of buildings codes and standards. Environmental sensitivities are a complex and often poorly understood group of chronic conditions. Individuals with environmental sensitivities experience adverse reactions to environmental agents that are prevalent throughout the built environment and include electromagnetic fields and the chemicals found in building materials, furniture, cleaning and copying products, fragrances and pesticides.

Canadian and Australian approaches to disability are very broad, and environmental sensitivities are readily accepted. In contrast, the *Americans with Disabilities Act* applies a very restrictive test for an individual to qualify as a person with a disability, and individuals with environmental sensitivities are regularly denied protection. Because of the scientific confusion regarding sensitivities, individuals have difficulty finding and providing expert evidence in the United States, and may have this difficulty in Canada as well.

Accommodations that individuals with environmental sensitivities may require generally involve minimizing the use of triggering substances, filtering triggers from the environment or avoiding the trigger-filled environment. Each type of accommodation may meet the test of undue hardship in Canada, but will depend upon the circumstances of the accommodating entity. The entity may be able to require the individual's non-attendance, where attendance would be detrimental to his or her health, and the entity may be required to use enforcement mechanisms to ensure that third parties co-operate with accommodation measures. Each of these types of accommodation has been rejected in the United States. There is little relevant jurisprudence in Australia and none in the United Kingdom and New Zealand.

The researchers identified only one case in which the barrier identified was a building rule—namely, a condominium by-law requiring wall-to-wall carpeting. While no cases involving barriers in building codes were identified, the standards fall far short of accommodating individuals with environmental sensitivities. Governments in the United States and Australia are attempting to implement rules under which people with environmental sensitivities will be partially accommodated.

When accommodating any disability, the same considerations of dignity, individual assessments and independence apply. Many businesses have implemented fragrance-free and chemical avoidance policies, some will provide special equipment or renovate their

spaces, and others have transferred, reassigned or retrained employees with environmental sensitivities. Nonetheless, the areas of necessary accommodations are broad and many non-traditional sectors must consider their accommodation obligations.

Recommendation 1: Where an individual with a poorly understood disability is unable to provide expert medical evidence, the employer, service provider or other decision maker should seek an informed expert opinion on the effects of the condition and the resulting accommodation needs.

Recommendation 2: Employers, service providers and other decision makers should ensure that, if accommodation requests are rejected, it is not because the medical evidence provided is not as unequivocal as it may be with other disabilities: knowledge and understanding of the condition is still developing, and expectations regarding medical evidence should reflect this.

Recommendation 3: When reviewing their building codes, governments across Canada proactively address issues related to accommodation of people with disabilities, especially disabilities that are difficult to address retrospectively, such as environmental sensitivities.

Recommendation 4: Employers and service providers should develop and enforce fragrance-free and chemical avoidance policies, including promoting educational campaigns to increase voluntary compliance with such policies.

Recommendation 5: Employers and service providers, for their staff and service recipients, should develop or adopt educational material and programs for accommodation of people with environmental sensitivities, to increase voluntary compliance with such policies.

Recommendation 6: Employers and service providers should proactively take steps to minimize chemical use, purchase less-toxic products, and advocate with the construction and manufacturing industries to produce less-toxic materials.

Recommendation 7: The Commission should undertake or continue educational campaigns that encourage proactive accommodations, including in non-traditional areas of accommodation, such as national parks or other green spaces.

Accommodation for Environmental Sensitivities: Legal Perspective

By: Cara Wilkie and David Baker

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Accommodation for Environmental Sensitivities: Legal Perspective

By: Cara Wilkie and David Baker

I. Introduction to the Issue

In an effort to clarify the issues surrounding environmental sensitivities and accommodation for them in employment, housing, facilities, employee organizations and services, the Canadian Human Rights Commission commissioned two research projects. One examines the medical and architectural considerations and awareness of environmental sensitivities. The other project, this report, examines past legal assessments of accommodation for environmental sensitivities, including how third parties may be involved and the relevance of buildings codes and standards. The report was commissioned to answer the following questions:

1. What is the current status of case law on environmental sensitivities in Canada, including complaints filed with federal, provincial and territorial human rights commissions and tribunals?
2. What is the current status of case law on environmental sensitivities in the U.S., U.K., Australia and New Zealand, including complaints filed with their human rights commissions and tribunals, if applicable?
3. Do government policies and standards on building codes, air quality and ventilation include features that can act as barriers or shortcomings that are detrimental to individuals with environmental sensitivities?
4. Does the case law include accommodation advice, including best practices, concerning environmental sensitivities? What are the pros and cons of these measures in terms of health, safety and cost?
5. What do the legislation and case law tell us about resolving situations where the rights and interests of some appear to conflict with those of others? How can opposing rights and interests be reconciled?
6. Where does the threshold of undue hardship lie under the *Canadian Human Rights Act* and the case law, considering the expense that may be involved in accommodations for environmental sensitivities (e.g. major renovations to buildings, moving to another building and major improvement of air quality)?
7. If there is a conflict between the preference of the employee and the ability of the employer to provide accommodation, and if so, how is this conflict resolved?

This report begins by examining environmental sensitivities generally to provide context for the research that follows. The authors consider environmental sensitivities in the light of international definitions of disability and evidentiary difficulties that may arise for

litigants because of the minimal understanding of the condition within the medical community.

In the sections that follow, the researchers turn to a consideration of the types of accommodations that may be requested by a person with environmental sensitivities and to jurisprudential consideration of the reasonableness of these accommodations in Canada, the United States, and Australia. The researchers also conducted research into New Zealand and United Kingdom jurisprudence, but were unable to identify anything of relevance. In each jurisdiction, the researchers consider which accommodations have been accepted and which have been rejected as unreasonable or as causing undue hardship. The researchers consider how third parties are engaged in the accommodation process and how the rights of the different parties are reconciled. The section concludes with the researchers drawing cross-jurisdictional conclusions on what accommodations will likely be required as a result of Canadian human rights analysis.

The researchers continue by examining the extent to which the case law, their consultations and secondary sources identify specific barriers or shortcomings in building codes and government standards on construction that are detrimental to individuals with environmental sensitivities.

This report concludes by providing, for the Commission and the employers, providers of goods, services, facilities or accommodations, and employee organizations subject to the *Canadian Human Rights Act*, R.S.C. 1985, c. H-6 (the "Act"), descriptions of best practices in relation to accommodation of environmental sensitivities and principles of universal design.[1] This discussion includes a review of sample policies specific to accommodation for environmental sensitivities, such as fragrance or smoking policies.

Environmental Sensitivities

Environmental sensitivities are not easily defined, as they are a complex and often poorly understood group of chronic conditions. The explanation of sensitivities that appears below is given here merely to provide context for the legal analysis that follows.

The Ad Hoc Committee on Environmental Hypersensitivity Disorders, chaired by former Judge George M. Thomson, defined environmental sensitivities as:

> a chronic (i.e. continuing for more than three months) multisystem disorder, usually involving symptoms of the central nervous system and at least one other system. Affected persons are frequently intolerant to

[1] While the Act's prohibition of discrimination in sections 5-13 applies to all employers, providers of goods, services, facilities or accommodations, and employee organizations under the federal jurisdiction of the Canadian Human Rights Commission, the researchers use the term "employers and service providers" throughout this paper. This term is used for ease of reference and not because the duty to accommodate and the standard of undue hardship discussed in this paper do not apply equally to all entities covered by the Act.

> some foods and they react adversely to some chemicals and to environmental agents, singly or in combination, at levels generally tolerated by the majority... Improvement is associated with avoidance of suspected agents and symptoms recur with re-exposure.[2]

Individuals with environmental sensitivities experience adverse reactions to environmental agents below the level deemed to be unsafe or to affect people. The causes, symptoms and triggers of environmental sensitivities vary from individual to individual. The triggering environmental agents are prevalent throughout the built environment and include electromagnetic fields and the chemicals found in building materials, furniture, cleaning and copying products, fragrances, and pesticides.

As a result of the scientific confusion, diagnostic difficulty and general lack of knowledge within the medical and broader community with regard to environmental sensitivities, the latter are often misdiagnosed as psychological or psychiatric conditions. This misdiagnosis and misunderstanding results in social stigma for people with sensitivities and may result in a denial of accommodation, with individuals being told that "it is in their head." However, despite the lack of clarity on the causes of environmental sensitivities and the absence of a diagnostic test, there is no doubt that individuals experience physical symptoms as a result of environmental agents. Even if environmental sensitivities were triggered by a psychiatric condition, the Act's guarantee of accommodation to the point of undue hardship and non-discrimination would be equally applicable, albeit potentially with different forms of accommodation.

While this paper uses the term "environmental sensitivities," numerous other terms refer to the same or similar conditions, including "multiple chemical sensitivity (MCS)," "chemical injury," "sick building syndrome," "environmental illness," "environmental hypersensitivity," "electromagnetic field (EMF) sensitivity," "Gulf War syndrome," "environmental sensitivity disorder," "20th century disease" and "environmental allergies." Because of the variation in triggers and symptoms, it is preferable to refer to sensitivities in the plural, rather than the singular.

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[2] *Report of the Ad Hoc Committee on Environmental Hypersensitivity Disorders*, to Murray J. Elston, Minister of Health (August 1985), at 17-18.

II. Environmental Sensitivities, Disability and Medical Evidence

a. Definitions of Disability

International approaches to definitions of disability in human rights protection vary in their reliance on medical diagnoses and symptoms. At one end of this spectrum are the Canadian and Australian approaches, in which a very broad definition of disability is adopted.[3] As a result of this, complainants are required to provide minimal medical evidence to establish that they qualify as persons with a disability, and individuals with environmental sensitivities do not need to prove the veracity of their condition. In fact, the courts have specifically held that the inability of the medical community to diagnose a condition or identify its cause does not affect whether an individual has a disability, so long as its triggers can be identified.[4] Instead, the analysis is meant to focus on the individual's accommodation needs and the behaviour of the employer or service provider.[5]

In contrast, the *Americans with Disabilities Act* (ADA) applies a very restrictive medical test for an individual to qualify as a person with a disability and be eligible for protection under the ADA.[6] Individuals with environmental sensitivities often find it difficult to establish that they have a disability under this definition. In one case, for example, the United States District Court held that a woman did not qualify as a person with a disability because her sensitivities to chemicals only affected a major life function (breathing) while at the office and exposed to chemicals.[7] Numerous other decisions have

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[3] Disability is defined in section 25 of the Act as "any previous or existing mental or physical disability and includes disfigurement and previous or existing dependence on alcohol or a drug."

Section 4 of the Australian *Disability Discrimination Act* (DDA) 1992 (Cth.) defines disability in an equally broad manner, however with more detail, as:

(a) total or partial loss of the person's bodily or mental functions; or

(b) total or partial loss of a part of the body; or

(c) the presence in the body of organisms causing disease or illness; or

(d) the presence in the body of organisms capable of causing disease or illness; or

(e) the malfunction, malformation or disfigurement of a part of the person's body; or

(f) a disorder or malfunction that results in the person learning differently from a person without the disorder or malfunction; or

(g) a disorder, illness or disease that affects a person's thought processes, perception of reality, emotions or judgment or that results in disturbed behaviour; and includes a disability that:

(h) presently exists; or

(i) previously existed but no longer exists; or

(j) may exist in the future; or

(k) is imputed to a person.

[4] *Brewer v. Fraser Milner Casgrain LLP*, [2006] A.J. No. 625 (Q.B.). Note that this decision is currently under appeal.

[5] See e.g. *Granovsky v. Canada (Minister of Employment and Immigration)*, [2000] 1 S.C.R. 703 at para. 26.

[6] To qualify as a person with a disability under the ADA (42 U.S.C. § 12102(2)), a claimant must have, be perceived as having or have a history of a "physical or mental impairment that substantially limits one or more of [their] major life activities."

[7] *Jones v. Ind. Civ. Rights Comm'n*, 2006 U.S. Dist. LEXIS 23954.

similarly concluded that environmental sensitivities do not qualify as a disability under the ADA because of their intermittence.[8]

b. Evidentiary Difficulties

The reliance upon medical evidence in the United States places individuals with environmental sensitivities at a particular disadvantage as a result of the scientific confusion or broad acceptance of environmental sensitivities, the diagnostic difficulties, and the variation in triggers, symptoms and severity. American courts have frequently refused to allow expert testimony on sensitivities because they have concluded that it does not meet the test of scientific reliability for the acceptance of expert evidence.[9] As a result, individuals with sensitivities are often required to identify their disability more restrictively so as to obtain the status of scientific reliability. They may, for example, state that their disability is asthma or an allergy to a particular chemical.[10] However, this may have a detrimental impact upon other aspects of the discrimination analysis, including whether a major life function is affected and what accommodations the person may require.

While the Canadian and Australian approaches do not rely as heavily on medical evidence, particularly in establishing that a person qualifies as a person with a disability, such evidence remains necessary and relevant in determining what accommodations the person requires. The authors have not identified any Canadian jurisprudence regarding the acceptability of a medical opinion on an environmental sensitivity as it relates to needed accommodations, but such an obstacle to complainants can be anticipated and frequently arises for individuals in workplace injury compensation regimes.[11]

The general lack of knowledge on sensitivities within the medical community and the unavailability of tests to identify particular triggers may act as an obstacle to the treatment of sensitivities and to a complainant's ability to identify appropriate experts to testify before a tribunal or provide evidence to an employer about accommodation needs.[12]

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[8] See e.g. *Owen v. Computer Sciences Corp.*, 1999 U.S. Dist. LEXIS 12635; *Minor v. Stanford University/Stanford Hosp.*, 1999 U.S. Dist. LEXIS 9135; and *Farrish v. Carolina Commercial Heat Treating* (2002), 225 F. Supp. 2d 632.

[9] See e.g. *Treadwell v. Dow-United Techs* (1997), 970 F. Supp. 974; *Gabbard v. Linn-Benton Hous. Auth.* (2002), 219 F. Supp. 2d 1130; *Frank v. New York* (1997), 972 F. Supp. 130; *Coffey v.County of Hennepin* (1998), 23 F.Supp.2d 1081; *Yacher v. Shalala* (2000), EEOC DOC 03A00077.

[10] See e.g. *Treadwell v. Dow-United Techs* (1997), 970 F. Supp. 974.

[11] See e.g. *Nova Scotia Teachers Union v. King's County District School Board (Manzer Grievance)*, [1997] N.S.L.A.A. No. 10; *Nova Scotia Teachers Union v. King's County District School Board (Van Zoost Grievance)*, [1996] N.S.L.A.A. No. 6; *Decision No. 899/97*, [1998] O.W.S.I.A.T.D. No. 1695.

[12] See e.g. *Wachal v. Manitoba Pool Elevators*, [2000] C.H.R.D. No. 4 (C.H.R.T.), where complaint dismissed for lack of evidence linking disability with absences; *United Parcel Service Canada and Smith*, [2000] C.L.C.R.S.O.D. No. 15, where unsuccessfully invoked right to refuse unsafe work because no evidence linking health reactions and the workplace; *Brewer v. Fraser Milner Casgrain LLP*, [2006] A.J. No. 625 (Q.B).

Recommendation 1: Where an individual with a poorly understood disability is unable to provide expert medical evidence, the employer, service provider or other decision maker should seek an informed expert opinion on the effects of the condition and the resulting accommodation needs.

Recommendation 2: Employers, service providers and other decision makers should ensure that, if accommodation requests are rejected, it is not because the medical evidence provided is not as unequivocal as it may be with other disabilities: knowledge and understanding of the condition is still developing, and the expectations regarding medical evidence should reflect this.

III. Accommodating Environmental Sensitivities: State of Knowledge

Because of the common use of chemicals throughout society, the spheres where individuals with environmental sensitivities may request accommodation are countless. While what are appropriate accommodations will depend on the individual's circumstances, the following is a list of some of the types of accommodations identified in the jurisprudence and secondary literature and through the researchers' consultations:

- Establishing and enforcing fragrance-free policies;
- Instituting a non-smoking policy that requires smokers to remain at a distance from entrances and ventilation intakes and that provides designated closets for the jackets and belongings of smokers;
- Carpet-free environments;
- Ensuring that the environment is not recently renovated and that all furniture and products are sufficiently used that they are no longer off-gassing;
- Informing the individual of planned cleaning, renovations or furniture purchases so that they may be involved in selecting products or may refrain from attending during that period;
- Eliminating or reducing chemical spraying, especially near ventilation intakes, and, if the spraying is unavoidable, informing individuals beforehand;
- Flexible work options, including telecommuting;
- Windows that open;
- Activated carbon or activated-charcoal-filtered air cleaners;
- Office locations away from copying and cleaning products and indoor traffic;
- Providing books that are sufficiently used that they will not off-gas, and that do not contain moulds or dust;
- Providing low-electromagnetic-field equipment;
- Not including perfume advertisements in magazines or limiting access to them;[13] and
- Establishing no-idling policies.

This list provides examples of accommodations that an individual may seek, but consideration is not given to whether such accommodations would be required of a covered entity or whether they are too onerous and would impose an undue hardship. As for other forms of accommodation, section 15(2) of the Act dictates consideration of health, safety and cost in the determination of what constitutes an undue hardship.

In the sections that follow, the authors will review jurisprudence on how this test is applied in the context of environmental sensitivities. In addition to accommodation steps taken by employers and by service and facility providers, full accommodation of environmental sensitivities may require that proactive steps be taken by co-workers,

[13] While the authors have identified no Canadian equivalent, American postal legislation and regulations require that fragrance advertising samples in the mail be sealed or wrapped to prevent accidental exposure (39 U.S.C. § 3001(g) and *Domestic Mail Manual*, 601.11.15).

neighbours and other service users. Issues therefore arise with regard to how the interests of different parties are reconciled and how the various parties are involved in the accommodation process. The authors also explore the extent to which courts have considered sufficiency of government policies and standards on building codes as they relate to accommodation for environmental sensitivities.

In conducting their research, the authors examined cases that have arisen in comparable contexts as well, including those of asthma and allergies, as they provide useful insight into what are considered reasonable accommodations.

a. Canada

i. Undue hardship

Section 15(2) of the Act specifically outlines the factors that may be considered in assessing what constitutes an undue hardship: health, safety and cost. Other Canadian approaches to disability protection, such as those of Ontario, specify similar considerations for what constitutes an undue hardship and is therefore not a required accommodation.[14]

Searches of Canadian jurisprudence revealed a surprising number of administrative decisions relating to environmental sensitivities. However, many of these do not address the specific issues that form the subject of this research as they relate to causation of injuries under workplace safety and insurance regimes,[15] turn on evidentiary issues, such as whether an employer was aware of a disability,[16] or conclude that the employer did appropriately attempt to accommodate an employee without considering the undue hardship test.[17] The decisions that relate to undue hardship have several general themes: the extent to which a covered entity must allow for non-attendance at its place of business, reasonable adjustments to the building or other accommodations, continuing to work when the workplace is injurious, and balancing conflicting interests.

1. Non-attendance

The first theme, that of non-attendance at the place of business, is one that is frequently referenced in the jurisprudence, though few decisions include a full undue hardship analysis. Such alternative attendance arrangements may include telecommuting or alternative work placements. The appropriateness of these means of accommodation

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[14] See e.g. *Human Rights Code*, R.S.O. 1990, c. H.19, s. 17(2).
[15] See e.g. *Dalhousie University v. Nova Scotia Government Employees Union (MacDonald Grievance)*, [2001] N.S.L.A.A. No. 12.
[16] See e.g. *Peace Wapiti School Board #33 v. General Teamsters, Local Union No. 362 (Kwasniewski Grievance)*, [2003] A.G.A.A. No. 92.
[17] See e.g. *Coles and Treasury Board (National Defence)*, [1998] C.P.S.S.R.B. No. 37.

largely depend on the particular circumstances of the employment and the entity providing the accommodation.

In *Harris,* a student complained of non-accommodation when she was required to attend a particular class, rather than being allowed to record the lectures or rely on notes taken by other students.[18] The tribunal considered the nature of the course and held that, since a major and reasonable purpose of the course was to develop skills through student interactions, non-attendance was not an appropriate accommodation. Instead, ensuring access to seating by an open window was an appropriate accommodation. However, in other courses that the student had taken where development of interactive skills was not the purpose of the course, the College was correct to accommodate the student by allowing her to record lectures or rely on student notes.

The *Anderson Grievance* decision also addresses this issue, albeit in obiter.[19] The grievor complained of the employer's non-accommodation after it failed to assign tasks that would allow the individual to remain away from the office during renovations. The employer argued that assigning such tasks would constitute an undue hardship, as the only non-office responsibilities within its business required that the individual drive. It argued that driving would be an inappropriate accommodation because, if the individual was unable to work in a dusty office during renovations, the individual also could not work out of the office doing tasks requiring driving, because of dust on the road. The arbitrator dismissed the grievance for lack of jurisdiction, but commented that the employer would likely have been unable to meet the undue hardship test, because of a lack of medical evidence concerning dust while driving. The arbitrator implicitly accepted the reasonableness of assigning the employee, at least temporarily, tasks out of the office.

In *Hutchinson*, the Public Services Staff Relations Board chastised a grievor for not accepting the reasonably proposed accommodation of telecommuting after alternative accommodation attempts, including requests to refrain from wearing fragrances and the purchase of an air cleaner and respirator, were unsuccessful.

Similarly, a grievor who wished to be accommodated by being allowed to work half-days was unsuccessful in her claim of non-accommodation.[20] The Board held that the claimant had unreasonably refused to be accommodated by working full time at an alternative location, whereas the employer had a reasonable operational justification for refusing to allow her to work part time.

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[18] *Harris v. Camosun College*, [2000] B.C.H.R.T.D. No. 51.

[19] *Re. Alberta and Alberta Union of Provincial Employees (Anderson Grievance)* (1996), Alta. G.A.A. File No. 96-075 (not published).

[20] *Guibord and Treasury Board (Transport Canada)*, [1995] C.P.S.S.R.B. No. 114, upheld on appeal [1996] F.C.J. No. 1534.

2. Other accommodations

Alterations within the building environment, use of different cleaning products, and policies on fragrances and smoking are a more commonly discussed form of accommodation. However, there is almost no Canadian jurisprudence on the subject. These accommodations can range from those that are quite easily implemented, such as altering cleaning products used, to drastic building changes. The reasonableness of the accommodation can therefore vary drastically, depending on the nature of the request and the entity of which it is requested.

In *Abetkoff,* the Saskatchewan Human Rights Commission initially rejected a complaint of non-accommodation by an individual with a smoke allergy working in a smoke-filled casino, as it had determined that there were no accommodations available that were not unduly burdensome.[21] Upon review, the Tribunal held that the employer had not fully considered the reasonableness of creating a smoke-free part of the casino. The Tribunal directed that, to establish that this would cause an undue hardship, the employer would have to conduct a full cost-benefit analysis. The Tribunal's decision was not a final disposition of the matter, as it was referred back to the Commission, but it clearly demonstrates the fulsome analysis that a covered entity will have to conduct, especially in relation to smoking policies that benefit individuals beyond just those with a smoke-related disability.

Similarly, in the *Hyland Grievance,* the Grievance Board held that an employer failed to meet its duty to accommodate when it refused to provide a prison guard with a smoke-free placement.[22] This was a reasonable accommodation, as the employee remained capable of working in a non-smoke-free environment as required during emergencies.

In a somewhat related decision, the Federal Court (Trial Division) considered a claim by an individual with environmental sensitivities that he had been subject to cruel and unusual punishment when incarcerated.[23] The Court considered the steps that the prison had taken to accommodate his disability, including attempting different assignments within the institution, providing special equipment and developing alternative living arrangements, and the Court concluded that the prison had taken all reasonable steps to accommodate him. The Court specifically rejected the proposal that the prison construct a special cell, not because of the expense associated with this, but because this was not feasible in light of the institution's construction schedule.

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[21] *Abetkoff v. Saskatchewan Indian Gaming Authority*, December 31, 2002 (SK H.R.T.).
[22] *Ontario (Ministry of Correctional Services) and O.P.S.E.U. (Hyland) (Re)*, 115 L.A.C. (4th) 289 (Ont. Cr. G. S. B).
[23] *Kelly v. Canada*, [1996] F.C.J. No. 880.

3. Continuing to work when environment harmful

A final theme that the researchers have discovered in the Canadian jurisprudence relates to refusals to work or insistence on working in an environment that is harmful to an individual with sensitivities.

Administrative decision makers have considered whether an employer can terminate an individual with sensitivities because the individual cannot be accommodated when he or she wishes to continue working in the harmful environment. In the *Gooch Grievance*, the employer terminated the grievor because it was unable to accommodate him by keeping him free from exposure to fumes, smoke and dust after several unsuccessful accommodation attempts.[24] The grievor argued that he was wrongfully terminated, as he was willing to continue to work in the harmful environment. The Board held that the employer was correct to terminate the employee against his objections, in light of the uncontradicted harm his continued employment would have caused him.

Similarly, in *Paradowski*, an animal hospital terminated an employee because of her allergies to animals.[25] It argued that it could not allow her to continue to work there and regularly ingest medications to minimize her allergic reactions. The Tribunal refused an application to dismiss the complaint, but has not made a final determination in the matter.

In addition to an employer's ability to terminate an employment relationship when it cannot be accommodated without ongoing adverse health effects on the employee, the employee may refuse to work in unsafe environments. The *Canada Labour Code*, for example, allows an employee to refuse unsafe work.[26] Under the current interpretation of the federal legislation, this right to refuse unsafe work includes the right to refuse work that is unsafe because of a combination of the worker's medical condition and the conditions of the workplace.[27]

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[24] *IKO Industries Ltd. v. Communications, Energy and Paperworkers Union of Canada, Local 773 (Gooch Grievance)*, [1999] A.G.A.A. No. 63.

[25] *Paradowski v. Sunshine Valley Animal Hospital Ltd.*, [2004] B.C.H.R.T.D. No. 442.

[26] R.S.C. 1985, c. L-2, s. 128. See also *Occupational Health and Safety Act*, R.S.O. 1990, c. O.1, s. 43(3).

[27] Federal interpretation policies and jurisprudence conclude that unsafe conditions must be caused by the workplace itself, not a medical condition of the employee (see e.g. Human Resources and Skills Development Canada, *Interpretations, Policies and Guidelines on Occupational Health and Safety, Part II of the Canada Labour Code, Refusals to Work and Medical Certificates*, No. 905-1-IPG-031). However, where the dangerous situation is a result of a medical condition AND the conditions of the workplace, the right to refuse work arises, albeit with great evidentiary difficulties in establishing causation (see e.g. *Bugden and Treasury Board*, [1988] C.P.S.S.R.B. No. 236; *United Parcel Service Canada and Smith*, [2000] C.L.C.R.S.O.D. No. 15; *Webber and Treasury Board*, [1993] C.P.S.S.R.B. No. 85; *Timpauer v. Air Canada*, [1985] F.C.J. No. 184). In contrast, the equivalent Ontario interpretation manual specifically states that a worker has the right to refuse work that is unsafe because of his or her "susceptibility" to the conditions at the workplace (Ontario Ministry of Labour, Operations Division, *Policy and Procedures Manual*, "Work Refusals Guidance Notes," 1 (22 August 2005) at 56).

4. Balancing conflicting interests

Often, when accommodations are sought, the interests of third parties are affected. This issue arises particularly clearly in an unionized environment where an accommodation may require that provisions of the collective agreement be disregarded to allow an individual to have increased sick leave, adopt flexible work arrangements or transfer positions. In Canada, courts and tribunals have interpreted the specific description of undue hardship considerations as rendering irrelevant the preferences of third parties or the terms of collective agreements, unless they create an undue expense.[28]

While the test and the relevance of these factors is the same when accommodating for environmental sensitivities or other disabilities, the types of accommodation that may be required for sensitivities make the issue particularly relevant. To accommodate an individual with a sensitivity to fragrances or smoke, other employees and customers may be required to refrain from using fragranced grooming or laundry products.

The researchers did not identify any Canadian jurisprudence where such a policy was assessed against the undue hardship standard, but it was often an accommodation that had been attempted by respondents to a grievance or complaint. Through their consultations and literature review, the researchers learned of numerous entities across Canada that have implemented fragrance-free policies or asked people in their offices to voluntarily refrain from using fragranced products.[29] The primary issue that arises is not one of the appropriateness of such policies, but rather of their enforcement. This issue is discussed in greater detail below.

As there is no right to wear fragranced products, the only conflict related to fragrance policies is one of interests, not rights.[30] However, rights-based conflicts have arisen and been discussed in the jurisprudence regarding service animals and allergies to animals. In *Dewdney*, a woman complained that a taxi driver refused her service because she used a service animal.[31] The Tribunal held that the driver's animal allergy constituted a disability and the two conflicting accommodations had to be balanced against one another. Because the passenger could easily obtain services from another driver without an allergy, the Tribunal found for the taxi company and its appropriate balancing of these conflicting rights.

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[28] See e.g. *British Columbia (Public Service Employee Relations Commission) v. British Columbia Government and Service Employees' Union (Meiorin Grievance)*, [1999] 3 S.C.R. 3 at para. 80; *R. v. Cranston*, [1997] C.H.R.D. No. 1; *Central Okanagan School District No. 23 v. Renaud*, [1992] 2 S.C.R. 970 at 988.

[29] The following Web site lists organizations with scent-free policies: Fragranced Policies Information Network, online: http://www.fpinva.org/Access%20Issues/policies_wordage.htm.

[30] See e.g. *McNeill v. Ontario (Ministry of Solicitor General & Correctional Services)*, [1998] O.J. No. 1188; *R. v. Ample Annie's Itty Bitty Roadhouse*, [2001] O.J. No. 5968; *Cominco Ltd. v. United Steelworkers of America, Local 9705*, [2000] B.C.C.A.A.A. No. 62.

[31] *Dewdney v. Bluebird Cabs Ltd.*, [2003] B.C.H.R.T.D. No. 5.

This issue was also considered in *Fitton*, where several passengers with service animals were not able to board a plane, as the pilot had severe allergies to dogs.[32] The Agency concluded that the airline had fulfilled its obligations by considering less intrusive alternatives, although none were operationally feasible. Nonetheless, the Agency recommended that the airline investigate development of a system that would cross-reference this information in its booking system.

At present, it is unclear whether smoking or addiction to nicotine will qualify as a disability requiring accommodations.[33] Should it qualify, issues similar to those related to animal allergies will arise, as the accommodation of smokers and those allergic to smoke may be in conflict with one another.

ii. Involving the various parties

Numerous parties may need to be involved in the accommodation process for it to be effective: employers, colleagues, commercial landlords, residential landlords, neighbours and service recipients. During their consultations, the researchers learned that, often, these parties are involved in the accommodation process through education and voluntary compliance. Just as harassment is prevented through both education and enforcement, so too is co-operation with the accommodation of environmental sensitivities.

For example, Nancy Bradshaw of the Environmental Health Clinic and Women's College Hospital in Toronto speaks to employers and employees on development of fragrance-free policies in the workplace.[34] She finds that, because a large portion of the population reports some sensitivity to fragrances and has a general understanding of asthma, a condition with similar environmental triggers, many individuals will voluntarily comply with fragrance policies. If unable to eliminate exposure to triggers, partial compliance will at least reduce the toxins from fragrances in the environment.

However, the main question is what to do when voluntary measures are unsuccessful. Is an employer required to discipline or terminate employees for non-compliance? Must a service provider refuse service to clients? Must a condominium or apartment building evict residents for not complying with smoking rules?[35] The answer to this question, as with all other accommodation, depends on the particular circumstances giving rise to the request for accommodation.

In *Hyland*, a prison guard filed a grievance for non-accommodation for his smoke sensitivity.[36] The Board held that the employer failed to accommodate by not enforcing

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[32] *Fitton et al. v. Air Georgian Ltd.*, Decision No. 528-AT-A-2004 (C.T.A.).
[33] See e.g. *Cominco Ltd. v. United Steelworkers of America, Local 9705*, [2000] B.C.C.A.A.A. No. 62; *Re. Hamilton-Wentworth (Regional Municipality) and C.U.P.E., Local 167* (1994), 44 L.A.C. (4th) 257.
[34] Interview of Nancy Bradshaw by Cara Wilkie and Margaret E. Sears (September 12, 2006).
[35] This issue was argued, though not decided, in *Brown v. Strata Plan LMS 952*, [2005] B.C.H.R.T.D. No. 137.
[36] *Ontario (Ministry of Correctional Services) and O.P.S.E.U. (Hyland) (Re)*, 115 L.A.C. (4th) 289 (Ont. Cr. G. S. B.).

its non-smoking policy and that it was unreasonable for it to require the grievor to identify those individuals breaching the policy, as this would result in his isolation from colleagues.

In *Maljkovich*, the Crown was ordered to pay compensation for breach of its common-law duty to provide a prisoner with a smoke allergy with a healthful environment.[37] The prisoner had been regularly exposed to smoke during his incarceration, and the Court held that the defendant should have taken the reasonable step of monitoring compliance with the non-smoking policy. As in *Hyland*, the Court held that the prison's reliance on guard observation of policy breaches or complaints being raised was unreasonable. Instead, enforcement of the policy should have included better monitoring of smoke-free spaces or smoke detectors to alert prison officials to policy breaches.

The Ontario Rental Housing Tribunal has considered the health effects of smoking on residential neighbours.[38] In *Feaver*, a landlord with health reactions to smoking sought to evict a tenant living below her because smoke passed between units through the ventilation system. While unable to conclude that her health effects were caused by the smoke, the Tribunal concluded that the smoke was preventing her reasonable enjoyment of the property and ordered the tenant to stop smoking in the unit. Should the tenant fail to comply with this order, the Tribunal ordered that the tenant could be evicted.

The researchers have not identified decisions specific to fragrance policies or other decisions that relate to the issues of enforcement against service recipients or in housing. The visibility of smoking and the general prevalence of smoke-detecting equipment make infringements of smoke-free policies simpler to identify and enforce than fragrance-free policies. Practically speaking, the ability to enforce fragrance policies is much greater with respect to employees than service recipients. In some environments, such as hospitals, enforcement of such policies against service recipients would be nearly impossible, as there is a right to receive services.

b. United States

Because of the dissimilarities between the ADA and the Act, comparisons with American jurisprudence must be made cautiously. Many conditions not easily recognized as disabilities in the United States, such as environmental sensitivities, do or would qualify in Canada (see discussion of definitions of disability above). Accommodations that have been rejected as unreasonable or as posing an undue hardship in the United States, such as the provision of sign-language interpretation services, may be required in Canada. The researchers therefore caution readers with regard to drawing conclusions from the cases outlined below.

[37] *Maljkovich v. Canada*, [2005] F.C.J. No. 1679.
[38] *Feaver v. Davidson*, [2003] O.R.H.T.D. No. 103.

i. Undue hardship

The ADA requires that proposed accommodations be both reasonable and not pose an undue hardship. Accommodations constitute undue hardship when they require actions that are significantly difficult or expensive. In making this determination, relevant factors to consider include the nature and cost of such accommodation, the financial resources of the enterprise, the number of individuals employed by it, the type of facilities it has and the type of operations carried out by the covered entity.[39] However, accommodations characterized as "personal devices and services" are not required as a form of accommodation where they are devices that the individual also requires outside the workplace.

Searches of American jurisprudence revealed a surprising number of decisions relating to environmental sensitivities that had either survived argument on the definition of disability or where this issue had not been addressed. The decisions that relate to undue hardship have several general themes: allowing for non-attendance at the workplace, providing a chemical-free environment, making alterations to the building and job restructuring.

1. Non-attendance

While the courts have been careful to state that they do not reject non-attendance options in all circumstances, in each case that the researchers have identified that relates to this issue, non-attendance was rejected because it was held to be an unreasonable form of accommodation.[40]

In *Jones*, the Court rejected an employee's proposal to be accommodated by being allowed to work from home, as the employee would not have had sufficient access to documents and people and would have created an unreasonable administrative burden.[41] Quoting the *Vande Zande* decision, the Court addressed the appropriateness of such accommodations:

> Most jobs in organizations public or private involve team work under supervision rather than solitary unsupervised work, and team work under supervision generally cannot be performed at home without a substantial reduction in the quality of the employee's performance. This will no doubt change as communications technology advances, but is the situation today. Generally, therefore, an employer is not required to accommodate a disability by allowing the disabled worker to work, by himself, without supervision, at home...[42]

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[39] ADA § 12111(10).
[40] See e.g. *Lalla v. Consol. Edison Co. of N.Y., Inc.*, 2001 U.S. Dist. LEXIS 5312.
[41] *Jones v. Ind. Civ. Rights Comm'n*, 2006 U.S. Dist. LEXIS 23954.
[42] *Ibid.* quoting *Vande Zande v. Wisconsin Dept. of Admin.*, 44 F.3d 538, 544-45 (7th Cir. 1995).

Similarly, in *Whillock*, the Court held that the employer was not required to allow an airline telephone agent to work from home, as the required computer equipment is normally in constant use and does not sit idle when a particular individual is not on duty.[43] Additionally, it was necessary to ensure the security of information and for the employee to have in-person interactions for supervision, mentoring and training. The Equal Employment Opportunity Commission (EEOC) similarly rejected such a work arrangement as unreasonable in *Roth*.[44]

In *Keck*, the complainant proposed working during off-peak hours, such as evenings and weekends, and proposed that smoke and perfumes be banned during those times.[45] Despite the fact that she had been allowed to work in this way previously for three years, the Court held that it did not constitute a reasonable accommodation, as supervision would not be possible. In *Heaser*, the Court similarly rejected a work-from-home arrangement, even though an individual had previously worked from home for three months, with no performance issues.[46]

2. Provision of a chemical-free environment

American courts have been similarly dismissive of proposals to accommodate for environmental sensitivities by providing a chemical-free environment. Generally, such accommodations are rejected on the basis that the accommodation requests are for personal devices and so the accommodations are not required by the ADA.[47]

In *Jones*, the Court considered a request to accommodate for sensitivities by avoiding exposure to the triggering substances:

> In this situation, there is only so much avoidance that can be done before an employer would essentially be providing a bubble for an employee to work in... An employer is not required by the ADA to create a wholly isolated work space for an employee that is free from other co-workers... The ADA does not mandate the creation of a co-worker free bubble for Jones.[48]

By contrast, providing a smoke-free area of the office to an individual with a sensitivity to smoke has been accepted as a reasonable accommodation.[49]

In *Comber*, the complainant argued that her employer had unreasonably refused an accommodation request not to drive a particular vehicle on a particular day, as a strong

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[43] *Whillock v. Delta Air Lines* (1995), 926 F. Supp. 1555.
[44] *Roth v. Johnson* (2006), EEOC DOC 01A55898.
[45] *Keck v. New York State Office of Alcoholism & Substance Abuse Servs.* (1998), 10 F. Supp. 2d 194.
[46] *Heaser v. Toro Co.* (2000), 247 F.3d 826.
[47] *McCauley v. Winegarden* (1995), 60 F.3d 766.
[48] *Jones v. Ind. Civ. Rights Comm'n*, 2006 U.S. Dist. LEXIS 23954 quoting Buckles v. First Data Resources, Inc., 176 F.3d 1098,1101 (8th Cir. 1999).
[49] *County of Fresno v. Fair Employment & Housing Com.* (1991), 226 Cal. App. 3d 1541.

deodorizer had recently been used in it. After rejecting evidence on environmental sensitivities as not being scientifically based, the Court held that the accommodation was not a reasonable one, as it would require the employer to respond to her "sense" of fragrances instantaneously.[50]

3. Building adjustments

Various renovations or changes to the building environment have been proposed and accepted in the case law. The cost of such adjustments and who will be funding them are primary considerations when determining their appropriateness.

In *Lincoln Realty*, the Pennsylvania Human Relations Commission ordered the largest number of accommodations that the researchers found for any individual with sensitivities. The Commission ordered the following: [51]

> 1) The landlord must allow the tenant to install a kitchen ceiling fan at the tenant's expense;
> 2) The landlord must remove the dishwasher and seal the pipes at its own expense;
> 3) The landlord must permit the tenant to install a washer and dryer in her unit at her own expense;
> 4) The landlord must install an exhaust fan in the laundry room and install a control switch on the first floor level, at its own expense;
> 5) The landlord must either paint or wallpaper the hallways of the building, using a less toxic paint and in consultation with the tenant, at its own expense;
> 6) The landlord must attempt to address any pest problem with the least toxic pesticide application possible, in consultation with the tenant and at its own expense;
> 7) The landlord must allow the tenant to either recover or uncover her floors at her own expense;
> 8) Within 100 feet of the building, the landlord must attempt to implement an organic lawn care program at its own expense; and
> 9) The landlord must provide to the tenant notice of pest and lawn treatments with toxic materials and all painting.

On appeal, the Court either upheld all of the accommodations or remanded them to the Commission for determination on particular issues, none of which related to their reasonableness or the hardship they might pose.

In *Nanette*, the Court held that, in their entirety, the accommodations requested by the claimant were unreasonable and she was therefore unable to perform the job safely.[52]

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[50] *Comber v. Prologue, Inc.* (2000), 2000 U.S. Dist. LEXIS 16331.
[51] *Lincoln Realty Management v. Pennsylvania Human Relations Commission* (1991), 143 Pa.Cmwlth. 54, 598 A.2d 594.
[52] *Nanette v. Snow* (2004), 343 F. Supp. 2d 465 & *Nanette v. Snow*, 2005 U.S. App. LEXIS 20320.

She had requested that the employer ensure that, in her work environment, no cleaning chemicals be used in her presence, there be good fresh air circulation, she not be located near a copier, there be no recent paint, carpet, glue or furniture, there be no perfumes, it be possible to open the windows and there be no construction.

As these two very different cases demonstrate, the outcome in each case depends on the identity of the covered entity and on who is funding the requested accommodations. However, the *Nanette* decision is more reflective of the jurisprudential treatment of accommodation requests by individuals with sensitivities.

4. Job changes

An alternative accommodation that may be explored is job restructuring. Where the individual's position requires attendance at the office or exposure to chemicals (as in the case of a factory worker), job changes or restructuring may provide a feasible alternative. However, the American courts have regularly held that employers are under no obligation to accommodate in such a way.

In *Mulloy*, the Court, while recognizing the possibility of job restructuring as a reasonable accommodation, held that "an employer need not exempt an employee from performing essential functions, nor need it reallocate essential functions to other employees...To request elimination of an essential function as an accommodation is... 'not, as a matter of law, a reasonable or even plausible accommodation.'"[53]

In *McAlpin*, an employer's refusal to create a vacancy by transferring an employee with a position that did not involve chemical exposure was upheld by the Court.[54] The Court held that "[a]n employer has no duty whatsoever to create a new job out of whole cloth, or to create a vacancy by transferring another employee out of his job."

In *Bazert*, the Court, while not ordering that the employer create a new position, did order it to return an individual to a previous position that was free from exposure to smoke, fragrances or cleaning products.[55] The Court's conclusion on the reasonableness of this accommodation was different from those above because the discriminatory action was transferring him out of the position where he was accommodated, rather than the complainant occupying a position and requesting to be transferred.

ii. Conflicting interests and involving the various parties

The research revealed only one decision on how conflicting interests can be balanced or third parties involved. The *Temple* decision considers the involvement of third parties in

[53] *Mulloy v. Acushnet Co.*, 2005 U.S. Dist. LEXIS 12778.
[54] *McAlpin v. National Semiconductor Corp.* (1996), 921 F. Supp. 1518. See also *Gits v. Minnesota Mining and Manufacturing* (2001), not reported in F.Supp.2d, 2001 WL.
[55] *Bazert v. Louisiana Department of Public Safety and Corrections* (2000), 1st C. C.A.

accommodation for a sensitivity and in enforcement.[56] The complainant was a tenant with environmental sensitivities who had been accommodated through duct cleaning, changing the cleaning products used, not painting, and removing carpet. When a tenant living below the complainant began using cleaning products that triggered health reactions, she was asked to change the product that she used and to put tin foil over her vents. The complainant continued to be exposed to the cleaning products and asked that the tenant below her reduce her use of cleaning products. When she failed to do so, the complainant asked that the tenant be evicted.

The Court held that this was an unreasonable accommodation as it would have resulted in evicting the longer-term tenant in favour of a new tenant. Just as it would be unreasonable to eject a senior employee from his or her position, evicting the longer-term tenant was unreasonable, as the Court ought to respect third-party interests.

Despite the somewhat limited legal requirement to involve third parties, the voluntary adoption of fragrance-free policies is as much an option as it is in Canada.

c. Australia

There is a single decision of relevance in Australia. In *Lewin*, the Australian Capital Territory Discrimination Tribunal considered an accommodation request made by a woman attending group therapy—specifically, a request that the organizers implement a no-fragrance policy.[57] Rather than instituting such a policy, the facilitators asked those in attendance at the first session to refrain from wearing fragrances in the future (though the accommodation request had been submitted prior to this session). The Tribunal held that such an accommodation did not pose undue hardship and that the facilitators' failure to request compliance prior to the first session and to take positive action subsequently to prevent exposure was discriminatory.

d. United Kingdom and New Zealand

As noted above, the authors reviewed the jurisprudence of the United Kingdom and New Zealand. However, they were unable to identify any cases relevant to this research.

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[56] *Temple v. Gunsalus*, 1996 U.S. App. LEXIS 24994.
[57] *Lewin v. ACT Health & Community Care Service*, [2002] ACTDT 2.

e. Conclusion

Through this review of domestic and international jurisprudential considerations of how to accommodate for environmental sensitivities, a number of conclusions can be drawn specific to the Canadian context. Canadian courts do not generally follow the American example in disability accommodation because of the very different definitions of disabilities and approach to accommodation (as discussed above). Nonetheless, the number of relevant Canadian decisions is large enough to draw thematic conclusions.

i. Undue hardship

Few proposed accommodations for environmental sensitivities have been found to constitute an undue hardship. While one can expect that a wholesale building renovation would be an undue hardship because of the cost involved, whereas minor alterations would not, none of the Canadian decisions on environmental sensitivities consider the appropriateness of such proposals.

However, arrangements to avoid the workplace when it cannot be made appropriate have been considered. This accommodation depends on the specific nature of the employee's position or of other positions in which it may be possible to place him or her. Nonetheless, Canadian courts are more willing to accept the appropriateness of alternative work arrangements, whether temporary or permanent, than are their American counterparts.

Unlike the situation with the conclusions drawn by the American courts, it can be expected that Canadian decision makers will continue to find that a non-smoking policy does not pose an undue hardship. We expect that the same rationale will likely apply to fragrance policies. Similarly, a covered entity would likely be expected to use less-toxic cleaning materials, pesticides and paints.

ii. Conflicting interests

In Canada, there generally will not be conflicting interests that warrant consideration in the human rights analysis. As with other disabilities, the preferences of third parties do not constitute an undue hardship and are irrelevant to the analysis.

Nonetheless, some interests are affected through enforcement, as discussed below, and some disabilities may require a balancing of conflicting rights to accommodations. Where two disabilities require conflicting accommodations, decision makers will first consider whether alternative means of accommodation exist that do not pose a conflict. If no such accommodation exists, the conflicting interests must be balanced against one another to determine which accommodation will impose less hardship on the covered entity or on the individuals. In *Fitton*, only one of the accommodations was operationally feasible; therefore, the employee was immediately accommodated and the service

recipients were inconvenienced while they awaited a time when they could be accommodated without significant difficulty.

iii. Involving the various parties

Canadian courts and administrative decision makers have not only concluded that employers and service providers are required to enforce smoking policies by disciplining employees or evicting tenants, but also have concluded that an entity cannot rely solely on complaints of non-compliance for enforcing the policy. Instead, the entity may be required to purchase smoke detectors at a reasonable expense. These decisions are certainly applicable to the enforcement of fragrance policies, though detection of infringements may be more difficult and would require the purchase and use of fragrance-detecting devices, the availability of which is unknown and beyond the scope of this project.[58]

[58] One device, known as a chromatograph, has been suggested as a potential device for fragrance detection. The specifics of this device, its uses or accuracy have not been examined by the authors.

IV. Government Policies and Standards on Building Codes

For this report, the researchers, through their consultations, secondary source review and case law searches, sought material on the extent to which government policies and standards on building codes, air quality and ventilation include features that act as barriers that are detrimental to individuals with environmental sensitivities.

The only case law that the researchers were able to identify that addresses barriers in building codes or rules is *Konieczna*.[59] The complainant identified as a barrier a by-law of a condominium complex requiring residents to have wall-to-wall carpeting, because she had severe allergies to the latex contained in carpeting, as well as to dust mites, mould and formaldehyde. The primary issue before the Tribunal was not the hardship that an accommodation might cause, but whether the Tribunal had the jurisdiction to examine the by-law and whether it constituted prima facie discrimination. The Tribunal found for the complainant on both issues and stated:

> Although the by-law is neutral on its face, and applies equally to all residents, the Complainant is adversely affected by the by-law because of her physical disability. The by-law affects her health and quality of life in a way it does not for other residents who do not suffer from the Complainant's disability.[60]

While the researchers were unable to identify any other case law addressing requirements in such standards that act as a barrier to persons with sensitivities, the standards fall far short of accommodating individuals with environmental sensitivities. Generally, building standards are intended for the safety of a building, rather than its impact on health, and as such are particularly unaccommodating in relation to environmental sensitivities.

In fact, the Ontario Human Rights Commission has specifically acknowledged the shortcomings of the *Ontario Building Code* in accommodation for disabilities generally. Building codes are designed to provide a minimum level of safety, but "those responsible for providing access often rely only on the requirements of the *Building Code* without due consideration for their obligations under the *Human Rights Code*."[61] In its submissions, the Commission recommended that the *Building Code* include standards to minimize chemical exposure.

Despite the shortcomings of building codes generally, the Act, the ADA and the DDA provide for developing standards on accessibility that move toward universal design. In Australia, the Human Rights Commission was recently involved in the redevelopment of the building codes to provide standards for accessibility. However, because the building

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[59] *Konieczna v. Strata Plan NW2489*, [2003] B.C.H.R.T.D. No. 37.
[60] *Ibid* at para. 51.
[61] Ontario Human Rights Commission, Submission to the Ministry of Municipal Affairs and Housing on the Accessibility Provisions of the Ontario Building Code, March 1, 2002.

codes do not currently address issues related to accommodation for environmental sensitivities, this project has yet to address such disabilities.[62]

In the United States, the National Institute of Building Sciences and the Access Board are working together to develop voluntary standards on indoor air quality as it relates to design and construction, operations and maintenance, building materials and designated clean air rooms.[63] While these guidelines are voluntary at this stage, the hope is that, by including industry representatives in their development, there will be greater voluntary compliance with them.[64]

The *California Building Code* currently defines the term "designated clean air room" and provides for certain ventilation and building standards to define a room as such.[65] Again, while buildings are not required to have such spaces, the development of voluntary standards is intended to lead to greater provision of such spaces and to allow individuals with environmental sensitivities to have confidence that they will be healthy in such spaces.

New York State has passed legislation and published guidelines obliging schools throughout the state to purchase less-toxic cleaning and maintenance products.[66] The purpose of the guidelines is to protect general student and employee health, not just the health of those sensitive to chemicals, but it will certainly act to minimize exposures for people with sensitivities as well.

At present, Canadian building codes and government standards related to accommodation for environmental sensitivities are lagging behind those of the United States and Australia. Several states have developed voluntary or mandatory standards on less-toxic alternatives.

> **Recommendation 3:** When reviewing their building codes, governments across Canada proactively address issues related to accommodation of people with disabilities, especially disabilities that are difficult to address retrospectively, such as environmental sensitivities.

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[62] Interview with Michael Small and Commissioner Graeme Innis by Cara Wilkie and Margaret E. Sears (August 29, 2006).

[63] National Institute of Building Sciences, "Report of the Indoor Environmental Quality Project to the Architectural and Transportation Barriers Compliance Board," July 14, 2005.

[64] Interview with James Raggio by Cara Wilkie and Margaret E. Sears (Sept. 6, 2006).

[65] *California Code of Regulations*, Title 24, Parts 2 and 12, 1117B.5.11-1117B.5.11.3.

[66] New York State Office of General Services, "Guidelines and Specifications for the Procurement and Use of Environmentally Sensitive Cleaning and Maintenance Products for All Public and Nonpublic Elementary and Secondary Schools in New York State" August 28, 2006, online: <http://www.ogs.state.ny.us/bldgadmin/environmental/GreenGuidelines_August2006.pdf>

V. Accommodating Environmental Sensitivities: Best Practices

In many cases in which environmental sensitivities were considered, a number of accommodations were attempted before the matter went to court or administrative grievance mechanisms were used. The experiences of the employers and service providers involved provide examples of best practices when accommodating for sensitivities. In addition, there are numerous secondary documents identifying means of accommodation for persons with environmental sensitivities. In this section, the authors review thematic best practice accommodations as considered in the jurisprudence and briefly assess them in relation to health, safety and cost.

a. Accommodation Principles and Practices

As for any other disability, the accommodation process for persons with environmental sensitivities must be conducted in an individualized, respectful and inclusive manner. Employers and service providers are well-advised to accommodate in a respectful manner that protects the individual's self-respect, privacy, comfort and autonomy.[67] Accommodations should be individual in nature and not "one size fits all."[68] Finally, the goal of accommodations is independence and full participation of the individual.[69] When evaluating potential accommodations, this is the standard that they ought to be measured against.

b. Fragrance Policies and Chemical Avoidance

Chemical elimination and avoidance is the most significant form of accommodation for environmental sensitivities. Employers and service providers ought to consider the extent to which they can eliminate use of pesticides and use less-toxic or non-toxic cleaning products. Such efforts not only serve to accommodate for environmental sensitivities, but also may minimize injuries and provide a healthier environment. The New Zealand Association of Hairdressers, for example, recognized how pervasive chemicals and resulting injuries were in its industry. As a result, it worked with the Occupational Safety and Health Service of the Department of Labour to develop guidelines on the use, minimization and storage of chemicals used in its industry.[70]

Fragrance policies are one form of chemical avoidance. The jurisprudence makes numerous references to employers and service providers who asked their employees or

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[67] See e.g. *Law v. Canada (Minister of Employment and Immigration)*, [1999] 1 S.C.R. 497 at para. 53 & *Granovsky v. Canada (Minister of Employment and Immigration)*, [2000] 1 S.C.R. 703 at para. 74.
[68] See e.g. *British Columbia (Public Service Employee Relations Commission) v. British Columbia Government and Service Employees' Union (B.C.G.S.E.U.) (Meiorin Grievance)*, [1999] 3 S.C.R. 3.
[69] See e.g. *Eaton v. Brant County Board of Education*, [1997] 1 S.C.R. 241 at para. 69.
[70] New Zealand Association of Hairdressers, "Guide to Occupational Safety and Health for the Hairdressing Industry" (February 1997).

service recipients to voluntarily refrain from using fragranced products.[71] Many human rights commissions, unions, churches, hospitals and offices have posted signs and implemented policies seeking voluntary compliance.[72]

Such means of accommodation have no associated costs or risks to health and safety and may in fact have a positive impact upon the health of non-environmentally sensitive individuals. As demonstrated in the extensive workplace injury jurisprudence on this subject, chemical avoidance may in fact prevent injuries and claims of workplace illness, and therefore reduce cost to the employer and health and safety risks in the entire workplace.[73]

Their success is entirely dependent on the collegiality of others and on any education efforts made to inform them as to the reason for the policy.[74] While the policy may not fully accommodate for an individual's sensitivity, in environments where enforcement is nearly impossible, such as where a hospital's service recipients are concerned, it will serve to reduce the frequency and intensity of chemical exposure.[75]

Wherever possible, a fragrance policy should be developed that incorporates enforcement mechanisms such as those that apply for the breach of any other workplace policy (a dress code, for example). The Canadian Department of Justice's policy, for example, specifically states that managers may be required to take "disciplinary action for those who do not accommodate their co-workers."[76]

> **Recommendation 4:** Employers and service providers should develop and enforce fragrance-free and chemical avoidance policies, including promoting educational campaigns to increase voluntary compliance with such policies.
>
> **Recommendation 5:** Employers and service providers, for their staff and service recipients, should develop or adopt educational material and programs for accommodation of people with environmental sensitivities, to increase voluntary compliance with such policies.

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[71] See e.g. *Brewer v. Fraser Milner Casgrain LLP*, [2006] A.J. No. 625 (Q.B.); *Lewin v. ACT Health & Community Care Service*, [2002] ACTDT 2; *Hutchinson and Treasury Board (Environment Canada)*, [1999] C.P.S.S.R.B. No. 39.

[72] See e.g. Department of Justice, "Environmental Sensitivities Guidelines," Newsletter, March 31, 2006; Region of Peel, "Scent Sensitivity Program", Wellness at Peel, March 4, 2003; Ottawa Hospital, , "Scent-free Workplace," *Administrative Policy and Procedure Manual* (June 13, 2001); Ontario Human Rights Commission, "About the Ontario Human Rights Commission," online: <http://www.ohrc.on.ca/english/about/index.shtml>.

[73] See e.g. Decision No. 2188/05, [2005] O.W.S.I.A.T.D. No. 2810; Decision No. 1165 02, [2004] O.W.S.I.A.T.D. No. 2081; Decision No. 1179/98, [1999] O.W.S.I.A.T.D. No. 2561; Decision No. 1271 00, [2001] O.W.S.I.A.T.D. No. 2342.

[74] See e.g. *Lewin v. ACT Health & Community Care Service*, [2002] ACTDT 2.

[75] Interview with Nancy Bradshaw by Cara Wilkie and Margaret E. Sears (September 12, 2006).

[76] Department of Justice, "Environmental Sensitivities Guidelines," Newsletter, March 31, 2006.

c. Special Equipment and Renovations

Commonly attempted and referenced means of accommodation are the provision of specialized equipment to filter the air or to avoid exposure to triggers. In *Treadwell*, an employer provided an employee with extended gloves, a hood, and a dust mask for her sensitivities.[77] In several cases, employers provided their employees with desk filtration systems or HEPA air filters.[78] In *County of Fresno*, the employer provided one of its employees with desk filtration systems to eliminate some of the smoke in the work environment.

The provision of small and individual equipment, while perhaps not providing full accommodation for an individual's disability, is inexpensive and poses no health or safety risks. Larger building or ventilation changes, such as those attempted in *West* and *Temple*, will result in a much larger expense to the employer, but are also more likely to provide a holistic accommodation for the individual with sensitivities.[79] Compared to avoiding or eliminating triggering substances, the provision of specialized equipment is not ideal, as it is much more efficient to avoid the release of toxic substances than to remove them once released.[80] Employers and service providers are therefore well-advised to focus primarily on avoidance and to accommodate by filtering the air only when avoidance is impossible or insufficient.

d. Transfers, Re-assignments and Retraining

In workplaces or positions that by definition involve great exposure to environmental agents, a transfer to an alternative position or alternative location may be the only feasible option. In *IKO Industries*, for example, the employee worked in a factory with regular exposure to wood, smoke and dust that made him ill.[81] No reasonable adjustment to the workplace would eliminate these exposures, as they existed because of the nature of the business. Nonetheless, the employer attempted to transfer the individual internally, in the hopes that other factories, doing similar work, would be appropriate.

In *Coles*, the employer similarly attempted a transfer and provided several months of retraining to an unskilled employee who had developed allergies to cleaners used in the kitchen in which she had worked.[82]

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[77] *Treadwell v. Dow-United Techs.* (1997), 970 F. Supp. 974.
[78] See e.g. *County of Fresno v. Fair Employment & Housing Com.* (1991), 226 Cal. App. 3d 1541; *Jones v. Ind. Civ. Rights Comm'n*, 2006 U.S. Dist. LEXIS 23954; *Vickers v. Veterans Admin.* (1982), 549 F. Supp. 85.
[79] *Justice v. West* (2000), EEOC DOC 01971002; *Temple v. Gunsalus*, 1996 U.S. App. LEXIS 24994. See also *Hutchinson and Treasury Board (Environment Canada)*, [1999] C.P.S.S.R.B. No. 39.
[80] See the companion report to this by Margaret E. Sears for greater details.
[81] *IKO Industries Ltd. v. Communications, Energy and Paperworkers Union of Canada, Local 773 (Gooch Grievance)*, [1999] A.G.A.A. No. 63.
[82] *Coles and Treasury Board (National Defence)*, [1998] C.P.S.S.R.B. No. 37.

In some cases, transfers between offices or from one position to another may be sufficient. If, for example, an individual is sensitive to the chemicals used in copying, relocating him or her away from printers, fax machines and photocopiers may be significant as a form of accommodation.[83]

Transfers and reassignments can certainly be provided as an inexpensive accommodation where retraining is not required. However, where no position with the employer can meet the individual's need for non-exposure, transfers and reassignments do not serve as an appropriate accommodation and may have significant health and safety implications.[84] The expense of retraining can be minimal if the individual has most of the skills required, but it can be high where he or she does not have them, as in *Coles*.

e. Areas of Coverage

Complete accommodation of individuals with environmental sensitivities requires efforts to minimize the use of toxic substances. As the jurisprudence demonstrates, individuals with environmental sensitivities may require proactive action in traditional areas of accommodation such as employment, commercial service provision and housing. However, their accommodation needs may also encompass the actions of commercial neighbours, parks when pesticides are sprayed, construction, and manufacturing of consumer and commercial products. Because chemicals are pervasive, so too must accommodation be if it is to adequately address the needs of individuals with environmental sensitivities.

> **Recommendation 6:** Employers and service providers should proactively take steps to minimize chemical use, purchase less-toxic products, and advocate with the construction and manufacturing industries to produce less-toxic materials.
>
> **Recommendation 7:** The Commission should undertake or continue educational campaigns that encourage proactive accommodations, including in non-traditional areas of accommodation, such as national parks or other green spaces.

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[83] See e.g. DeFreitas Saab, T., "Accommodation and Compliance Series: Employees with Multiple Chemical Sensitivity and Environmental Illness," online: Job Accommodation Network <http://www.jan.wvu.edu/media/MCS.html>.

[84] See e.g. *IKO Industries Ltd. v. Communications, Energy and Paperworkers Union of Canada, Local 773 (Gooch Grievance)*, [1999] A.G.A.A. No. 63; *Paradowski v. Sunshine Valley Animal Hospital Ltd.*, [2004] B.C.H.R.T.D. No. 442.

VI. Conclusion

There are many more obstacles to accommodation for environmental sensitivities than there are to many other disabilities. A person with sensitivities may find it difficult to understand his or her condition and its triggers, and may then find it difficult to explain and document these to employers and service providers. Successful accommodations require innovative strategies to minimize or eliminate exposure to triggers through their elimination or removal from the environment or through avoidance of the environment. Individuals normally excluded from the accommodation process, such as colleagues, other service recipients and neighbours, must actively participate in many accommodations of people with environmental sensitivities if the accommodation is to be successful. Employers and service providers must be willing to develop and utilize enforcement mechanisms to compel compliance where it is not provided voluntarily. These hurdles are largely unique to environmental sensitivities.

Appendix A: Research Methodology

Literature Review and Consultations

The researchers began by conducting a review of secondary literature resources on environmental sensitivities, accommodation for them and relevant case law. Such documents, identified through electronic database searches, the consultation process, and hard-copy indices, broadened the review of jurisprudence and provided contextual information on environmental sensitivities.

Simultaneously, the researchers contacted representatives of domestic and international human rights agencies and organizations with expertise in environmental sensitivities. The researchers were able to identify relevant literature, jurisprudence, best practices and standards through their consultation. Additionally, the researchers were able to confirm their conclusions on the state of the case law in each jurisdiction through this process.

The researchers have incorporated in this report the information gathered through the literature review and consultation.

Legal Database Search

The researchers examined the jurisprudence in each Canadian jurisdiction from human rights tribunals and the courts, and in union arbitration decisions. Similarly, the researchers reviewed relevant jurisprudence and administrative decisions in New Zealand, Australia, the United States and the United Kingdom. Cases of significance were subsequently noted to follow the development of the jurisprudence and considerations applied in the past.

The researchers used a number of terms in their searches, but the primary terms used were "environmental sensitivity," "chemical sensitivity," "environmental illness," "asthma" and "allergy."

After identifying relevant case law, the researchers reviewed the decisions to identify emerging themes, patterns and rules.

Appendix B: Annotated List of Available Resources

Articles

Ad Hoc Committee on Environmental Hypersensitivity Disorders, report to Murray J. Elston, Minister of Health (August 1985). This report details the knowledge about environmental hypersensitivity, especially its prevalence, diagnosis, and treatment.

Advisory Panel on Environmental Hypersensitivity, report to R. Reid, Assistant Deputy Minister of Health (September 8 1986). Review of the report of the Ad Hoc Committee on Environmental Hypersensitivity Disorders.

Afram, R., "New Diagnoses and the ADA: A Case Study of Fibromyalgia and Multiple Chemical Sensitivity" (2004), 4 *Yale J. Health Pol'y L. & Ethics* 85. Extensive review of cases in relation to whether fibromyalgia and MCS are a disability under the ADA.

Allergy and Environmental Health Association, "The Environment of Learning: How School Boards Can Help," PowerPoint presentation (n.d.). This presentation provides information about environmental sensitivities in order to promote better indoor school environments and air quality.

Ashford, N. & Miller, C., "Chemical Sensitivity: A Report to the New Jersey Department of Health" (December 1989). This report provides a review of MCS and cautions against pursuing psychological causes of illness before environmental causes have been ruled out.

Bigenwald, C.A., Director, District Health Council Program, memorandum to D.W. Corder, Acting Assistant Deputy Minister, Ontario Ministry of Health (July 23, 1986). Review of Advisory Panel on Environmental Hypersensitivity's recommendations.

Buck, K., Director, Policy and International Program, Canadian Human Rights Commission, letter to Brett Moore, Head Eco-Systems Protection, Parks Canada (June 26, 2003). Letter on environmental sensitivities, the duty to accommodate and chemical spraying.

Canada Mortgage and Housing Corporation, "Research house for the environmentally hypersensitive: description and technical details" (1994). Brochure describing prototype house to improve air quality for individuals with environmental sensitivities.

Citizens for a Safe Learning Environment, "Examples of North American Organizations That Recognize Multiple Chemical Sensitivities/Environmental Illness," online: http://www.chebucto.ns.ca/education/CASLE/casle.html. Brief overview of some North American jurisdictions and organizations that have taken steps to recognize environmental sensitivities.

DeFreitas Saab, T., "Employees with Fragrance Sensitivity," *Accommodation and Compliance Series*, online: Job Accommodation Network, http://www.jan.wvu.edu/media/fragrance.html. Overview of respiratory impairments in the context of the ADA and the duty to accommodate.

DeFreitas Saab, T., "Employees with Multiple Chemical Sensitivity and Environmental Illness," *Accommodation and Compliance Series,* online: Job Accommodation Network, http://www.jan.wvu.edu/media/MCS.html. Overview of MCS in the context of the ADA and the duty to accommodate.

DeFreitas Saab, T. "Employees with Respiratory Impairments," *Accommodation and Compliance Series*, online: Job Accommodation Network, http://www.jan.wvu.edu/media/respiratory.html. Overview of respiratory impairments in the context of the ADA and the duty to accommodate.

Department of Justice, "Environmental sensitivities: finding solutions," *Inter Pares* (Summer/Fall 2003). Article from an internal publication describes the accommodation received by two Department of Justice employees with environmental sensitivities.

Fallace, M. & Lang, R., "Why Multiple Chemical Sensitivity and Related Conditions Should Be Excluded from the Americans with Disabilities Act" (1997), 48 *Lab. L.J.* 66 (Appendix A, tab 21). Article on MCS as a disability and accommodation for it.

Guiffrida, D., Psychiatric Patient Advocate Office, letter to Howard Danson, Acting Director, Psychiatric Hospitals Branch, Ministry of Health (July 12 1989). Letter on effect of environmental toxins in hospital setting

Health and Welfare Canada, "Chronic Diseases in Canada, Supplement: Environmental Sensitivities Workshop" (May 24 1990). Contains 20 recommendations regarding environmental sensitivities.

Human Resources and Social Development Canada "*Refusals to Work and Medical Certificates,*" No. 905-1-IPG-031, *Interpretations, Policies and Guidelines (IPGs) on Occupational Health and Safety, Part II of the Canada Labour Code*. Excerpt from policy and guidelines regarding work refusals by individuals with disabilities or specific medical conditions.

Kassirer, J. & Sandiford, K., "Socio-Economic Impacts of Environmental Illness in Canada," report to the Environmental Illness Society of Canada, November 15, 2000. Report detailing the social and economic costs of environmental illnesses in Canada to both individuals with sensitivities and to the public as a whole.

Lieberman, M.S. et al., "Multiple Chemical Sensitivity: An Emerging Area of Law" (1995), *Trial* 31:22 (LegalTrac). Article discusses accommodating people with MCS in housing and employment.

Mahoney, W.J., OMA Liason, Special Education Advisory Council, Ministry of Education, letter to Peter Ferren, Special Education Advisory Council, Ministry of Education, Special Schools Branch (October 24, 1995). Letter discusses MCS in the educational environment.

McCampbell, A., "Multiple Chemical Sensitivities Under Siege," online: Townsend Letter for Doctors and Patients' Archives (January 2001), http://www.tldp.com. Article focussing on New Mexico, mostly about the chemical industry and corporate lobbying regarding MCS.

McDonald, J., "This Place Makes Me Sick!", (2002) 28 *Employee Rel. L.J.* 101. Article on MCS as a disability.

McWilliams, K., "Peanut-Free Buffer Zones: Has the Department of Transportation Gone Nuts?" (1999), 65 *J. Air L. & Com.* 189. Article on discrimination in air travel.

ME/CFS Society, "MCS Basics Paper," online: http://sacfs.asn.au/about/chemical/mcs_basic.pdf. Paper reviews international positions on and recognition of MCS and criticizes the Australian response.

Ministry of Labour, "Work Refusals Guidance Notes," *Policy and Procedures Manual.* Excerpt from policy manual regarding work refusals by workers who are particularly susceptible to health conditions.

National Institute of Building Sciences, "Report of the Indoor Environmental Quality Project to the Architectural and Transportation Barriers Compliance Board," July 14, 2005. Report on improving access to buildings for people with MCS and EMS.

New Zealand Association of Hairdressers Inc., "Guide to Occupational Safety and Health for the Hairdressing Industry," February 1997. Guide developed as a result of injuries and health problems related to the work practices in the hairdressing industry that gives information about best practices on protection.

Norton, K., Chief Commissioner, Ontario Human Rights Commission, Letter to Tony Clement, Minister of Health and Long-Term Care (April 16 2003): Letter on use of pesticides for West Nile virus prevention, implications for people with environmental sensitivity and the duty to accommodate.

Norton, K., Chief Commissioner, Ontario Human Rights Commission, letter to Pat Vanini, Executive Director, Association of Municipalities of Ontario (April 16, 2003). Letter on use of pesticides for West Nile virus prevention and implications for people with environmental sensitivity and the duty to accommodate.

Ontario Human Rights Commission, "Submission to the Ministry of Municipal Affairs and Housing on the Accessibility Provisions of the Ontario Building Code," March 1, 2002. Document notes the inadequacy of existing government standards on accessibility.

Ontario Medical Association Committee on Public Health, "Environmental Hypersensitivity Disorders," report to Council 1987. Position paper calling for the separation of medical and social issues around environmental hypersensitivity disorders.

Public Service Alliance of Canada, "Multiple Chemical Sensitivity at Work: Guide for PSAC Members" (April 1997). Guide outlines issues around MCS in the workplace, including information on symptoms and how a union can help.

Read, D., "Multiple Chemical Sensitivities" (report to the Environmental Risk Management Authority of New Zealand, June 2002), online: ERMANZ Reports, Reviews and Research, http://www.ermanz.govt.nz/resources/publications/pdfs/ER-GI-02-1.pdf. Report is an overview of scientific knowledge on MCS.

Reed Gibson, P., "Understanding & Accommodating People with Multiple Chemical Sensitivity in Independent Living" (2002), online: Independent Living Research Utilization, http://www.ilru.org/html/publications/bookshelf/MCS.html. Booklet reviews the employment, housing and social challenges faced by people with MCS, and makes suggestions for how independent living advocates can assist them.

Sears, M. et al., "Pesticide assessment: Protecting public health on the home turf" *Paediatr. Child Health* 2006; 11(4):229-234., online: Prevent Cancer Now, http://www.preventcancernow.ca/news/pdf/06-04-Sears24-D.pdf. Article reviews the Canadian assessment standard for a common herbicide, and advocates for stronger legislation and increased use of alternate landscaping practices.

Sine, D. et al., "Accommodating Employees with Environmental Sensitivities: A Guide for the Workplace," online: Healthy Indoors Reports and Publications, http://healthyindoors.com/english/resources/workplace1.pdf. Educational booklet aimed primarily at employers.

Staton, K.A. & Caswell, T.A., "The Americans with Disabilities Act As It Relates to Employment in the Aviation Industry: Navigating Through Uncontrolled Airspace," (1999) 64 *J. Air L. & Com.* 459. Discussion of MCS and appropriate accommodations.

Stutt, E. & Rotor, L., "Accommodating the Needs of Students with Environmental Sensitivities: A Report for School Boards, Parents and Educators," Allergy and Environmental Health Association of Canada (January 1996). Guide explaining environmental sensitivities in the educational context with information on accommodating students.

Wilson, C.W., "MCS Disorder and Environmental Illness as Handicaps," online: Global Recognition Campaign for Multiple Chemical Sensitivity and Chemical Injury, <http://www.mcs-global.org/Documents/PDFs/MCS%20Disorder.pdf#search=%22MCS%20Disorder%20a

nd%20Environmental%20Illness%20as%20Handicaps%22>. Memo analysing whether MCS is a disability under the *Fair Housing Act*.

Winterbauer, S. "Multiple Chemical Sensitivity and the ADA: Taking a Clear Picture of a Blurry Object (Americans with Disabilities Act of 1990)," (1997) 23 *Employee Rel. L.J.* 64 (LegalTrac). Practical discussion on accommodating an employee with MCS.

Working Group of the WHO European Centre for Environment and Health, Bilthoven Division, "The Right to Healthy Indoor Air: Report on a WHO Meeting, Bilthoven, Netherlands, 15-17 May 2000," UN Doc. EUR/00/5020494, online: World Health Organization Regional Office for Europe, <http://www.euro.who.int/document/e69828.pdf>. Document reviewing the increasing incidence of health problems from unsafe indoor air.

Sample Policies

Allergy and Environmental Health Association, "No Scents, Please!", OC Transpo scent-free awareness sign. Sign to be posted inside OC Transpo buses were part of an information campaign.

Department of Justice Human Resources Planning and Policy Unit, "Policy on Accommodating Differences in the Workplace" (June 2001). This policy sets out the requirements and procedures for the accommodation of all employees and prospective employees who require accommodation on any ground protected by the *Canadian Human Rights Act* and the *Employment Equity Act*.

Department of Justice, "Environmental Sensitivities Guidelines," Newsletter, March 31, 2006. Guideline outlining the Department's policies on indoor air quality as it relates to environmental sensitivities.

Fragrance Products Information Network, "Workplace Policies," online: <http://www.fpinva.org/Access%20Issues/workplace_policies.htm>. This document reviews the rationales for fragrance-free policies in the workplace and suggests how they may be implemented.

New York State Office of General Services, "Guidelines and Specifications for the Procurement and Use of Environmentally Sensitive Cleaning and Maintenance Products for All Public and Nonpublic Elementary and Secondary Schools in New York State," August 28, 2006, online: http://www.ogs.state.ny.us/bldgadmin/environmental/GreenGuidelines_August2006.pdf. Guidelines developed to protect the health of children and employees by using products that minimize adverse health impacts.

New Zealand Association of Hairdressers, "Guide to Occupational Safety and Health for the Hairdressing Industry" (February 1997). This guide was developed to address injuries

and health problems directly attributably to workplace practices in the industry. It gives information for employers and employees on safer work environments.

Office of Compliance, Student Policy and Judicial Affairs of Rutgers State University, , "Whether Multiple Chemical Sensitivity (MCS) is a disability protected under Section 504 and the ADA" (January 2002), online: Office of Compliance, Student Policy and Judicial Affairs, http://www.rci.rutgers.edu/~polcomp/docs/mcs.pdf. A policy advisory discussing the responsibility of the university to provide accommodations to individuals with MCS.

Office of General Counsel at The Catholic University of America in Washington, D.C., Summary of Federal Laws, "Non-Discrimination with Respect to Students" (August 2005), online: The Office of General Counsel, http://counsel.cua.edu/fedlaw/rehabs.cfm. A summary of accessibility guidelines for the university campus noting that federal regulation does not make provision for MCS or EMS.

Ottawa Hospital, , "Scent-free Workplace," *Administrative Policy and Procedure Manual*, (June 13, 2001). Document describes the hospital's scent-free work environment.

Ontario Human Rights Commission, "About the Ontario Human Rights Commission," online: http://www.ohrc.on.ca/english/about/index.shtml. This Commission document includes its request for voluntary compliance with a fragrance-free policy.

Penetanguishine General Hospital, "Fragrance Friendly Environment": Poster reminding people about patients with sensitivities to scents.

QEII Health Sciences Centre Administrative Policy and Procedure, "Smoking, Scents and Air Quality" (January 1997): Policy document explaining the requirement for a smoke and fragrance-free environment, including the consequences of violation.

Region of Peel, "Scent Sensitivity Program", Wellness at Peel, March 4, 2003: Fragrance-free policy of the Region of Peel

Regional Municipality of Halifax, "No Scents Makes Good Sense", Metro Transit scent-free policy poster: Poster requesting passengers to refrain from using scented products.

Health and Welfare Canada, Health Protection Branch, "Les Sensibilités d'Origine Environnementale," *Actualités* (December 23, 1991). This document provides a brief explanation of the symptoms, treatment and prevention of environmental sensitivities.

Websites of Relevant Organizations

Allergy and Environmental Health Association, www.aeha.ca

American Academy of Environmental Medicine, www.aaem.com

American Industrial Hygiene Association, www.aiha.org

American Environmental Health Foundation, www.aehf.com

Asthma and Allergy Foundation of America, www.aafa.org

Environmental Health Network, www.ehnca.org

Canada Employment Immigration Union, www.ceiu-seic.ca/page_1766.cfm

Chemical Injury Information Network, www.ciin.org

Citizens for a Safe Learning Environment, http://www.chebucto.ns.ca/education/CASLE

Environmental Health Clearinghouse, www.infoventures.com/e-hlth

Environmental Health Clinic, www.mcms.dal.ca/ricu/environ.htm

Environmental Illness Society of Canada, www.eisc.ca

Environmental Law Centre, www.elc.org.uk

Environmental Sensitivities Research Institute, www.esri.org

Fragranced Products Information Network, www.fpinva.org

Healthy Indoor Partnerships, http://healthyindoors.com/

Human Ecology Action League, www.members.aol.com/HEALNATN/index.html

Institute for Environmental Health Sciences, www.niehs.nih.gov

Invisible Disabilities Association of Canada, www.nsnet./org/idacan

Job Accommodation Network, www.jan.wvu.edu

MCS Referral and Resources, www.mcsrr.org

National Centre for Environmental Health, www.cdc.gov/nceh

National Foundation for the Chemically Hypersensitive, www.mcsrelief.com

Appendix C: List of Acronyms

ADA: *Americans with Disabilities Act*

DDA: *Disability Discrimination Act*, Australia

CHRC: Canadian Human Rights Commission

EEOC: Equal Employment Opportunity Commission

EMF: electromagnetic field

EMS: electromagnetic sensitivities

MCS: multiple chemical sensitivities or multiple chemical sensitivity

Appendix D: List of Organizations and Individuals Consulted

The following are individuals and organizations consulted by the authors. Contacts that were made with other individuals and organizations did not lead to a consultation.

Human Rights Commissions and Government Organizations:

Individual(s) Consulted	Organization Represented
1. Sylvia Bell and Denny Anker	New Zealand Human Rights Commission
2. Rod Robb	Disability Rights Commission, Great Britain
3. Michael Small and Graeme Innes	Human Rights and Equal Opportunity Commission, Australia
4. Audrey Dean and Cassie Palamar	Alberta Human Rights and Citizenship Commission
5. Cherie Robertson	Ontario Human Rights Commission
7. John Dwyer	Formally of Canadian Human Rights Commission
8. Karen Izzard	Canadian Human Rights Commission
9. George Thomson	Formally of Ad Hoc Committee on Environmental Hypersensitivity Disorder
10. Alec Farquahar	Ontario Ministry of Labour, Occupational Health and Safety
11. James Raggio	Access Board, United States
12. Christopher Kuczynski and Danielle Hayot	Americans with Disabilities Act, Policy Division, Equal Employment Opportunity Commission, United States
13. Janie Hickok Siess and Paul Ramsey	Department of Fair Employment and Housing, California

Non-Governmental Organizations:

Individual(s) Consulted	Organization Represented
1.Kirk Spencer and Seema Lamba	Public Service Alliance of Canada
2. Fred Sadori	Canadian Employment and Immigration Union
3. Matthew Wilson	Director of Labour Relations and

	Compensation, Durham Region, Ontario
4. Virginia Salares	Canada Mortgage and Housing Corporation
5. Jennifer Agnolin	Canadian Environmental Law Association
6. Shirlie Delay	Invisible Disabilities Association of Canada
7. Claudette Guibord	Advocacy Group for the Environmentally Sensitive, Canada
8. Linda Nolan-Leeming	Allergy and Environmental Health Association, Canada
9. Virginia Loescher	Scarborough Legal Clinic
10. Jay Kassirer	Healthy Indoors Partnership, Canada
11. Nancy Bradshaw	Environmental Health Clinic, Women's College Hospital, Canada
14. Alfred Donnay	Multiple Chemical Sensitivities Referral & Resources and John Hopkins University, United States
15. Tracie DeFreitas Saab	Job Accommodation Network, United States
16. Dr. Colin Little	Allergy and Environmental Sensitivity Support and Research Association, Australia
17. Dorothy Bowes	Allergy, Sensitivity and Environmental Health Association of Queensland, Australia
18. Dr. Kartar Badsha	Environmental Law Centre, United Kingdom
19. Bonita Poulin	Global Recognition Campaign for Multiple Chemical Sensitivity and Chemical Injury