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CELR/FCRDE

PRESENTATION TO THE SUBCOMMITTEE ON ACID RAIN  
OF THE STANDING COMMITTEE ON FISHERIES AND FORESTRY

2 OCTOBER, 1980

INTRODUCTION

I AM SURE THAT BY NOW THE SUBCOMMITTEE HAS HEARD A GREAT DEAL OF TESTIMONY FROM VARIOUS CITIZENS GROUPS AND GOVERNMENT AGENCIES ON THE NATURE AND EFFECTS OF ACIDIC PRECIPITATION. SINCE THE EXPERTISE OF THE TWO GROUPS I REPRESENT LIES IN THE AREA OF LAW, I WOULD LIKE TO BRIEFLY SUMMARIZE FOR THE SUBCOMMITTEE, THE MAIN POINTS OF THE REGULATORY APPROACHES THAT CANADA AND THE U.S. ARE CURRENTLY FOLLOWING IN THE AREA OF AIR POLLUTION, AND TO POINT OUT WHAT WE BELIEVE TO BE CERTAIN WEAKNESSES INHERENT IN THE APPROACHES CONCERNING THE CONTROL OF ACIDIC PRECIPITATION.

FOLLOWING THIS SUMMARY, I WOULD LIKE TO BRIEFLY MENTION A FEW PIECES OF RESEARCH WHICH HAVE COME TO OUR ATTENTION WHICH MIGHT BE OF USE TO THE SUBCOMMITTEE IN FULLY APPRECIATING THE NATURE AND IMPACT OF ACIDIC PRECIPITATION.

AT THE OUTSET, I SHOULD MENTION THAT MY COMMENTS ON THE REGULATORY PROCESS IN CANADA AND THE UNITED STATES ARE IN LARGE PART TAKEN FROM A RECENT ARTICLE BY GREGORY WETSTONE, AN ATTORNEY AT THE ENVIRONMENTAL LAW INSTITUTE IN WASHINGTON, D.C. HIS COMMENTS WERE PUBLISHED IN THE FEBRUARY, 1980 ISSUE OF THE ENVIRONMENTAL LAW REPORTER, AN ENVIRONMENTAL LAW INSTITUTE PUBLICATION.

LET ME FIRST SUMMARIZE AMERICAN REGULATORY APPROACHES TO AIR POLLUTION.

UNITED STATES

1. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

NATIONAL AMBIENT AIR QUALITY STANDARDS ARE NUMERICAL TRANSLATIONS OF THE U.S. CLEAN AIR ACT OBJECTIVES THAT AIR POLLUTION NEITHER ENDANGER THE PUBLIC HEALTH NOR THREATEN PUBLIC WELFARE. AT PRESENT, AMBIENT STANDARDS EXIST FOR SULPHUR DIOXIDE AND NITROGEN DIOXIDE, BUT THE COMPOUNDS MOST DIRECTLY RELATED TO ACID PRECIPITATION, THAT IS SULPHATES AND NITRATES, ARE NOT DIRECTLY REGULATED BY THE ACT. THEREFORE, THE DRY DEPOSITION OF SULPHATES AND NITRATES, WHICH OFTEN CONTRIBUTES SIGNIFICANTLY TO THE ACID PROBLEM IN MANY AREAS, IS NOT NOW VIEWED AS A VIOLATION OF THE EXISTING AMERICAN AIR QUALITY STANDARDS.

AS REGARDS SULPHUR DIOXIDE IN PARTICULAR, THE UNITED STATES HAD UNTIL THIS YEAR RELIED PRIMARILY ON A CRITERIA DOCUMENT FOR SULPHUR DIOXIDE BASED ON EVIDENCE CONCERNING HEALTH AND WELFARE EFFECTS RESULTING FROM SHORT-TERM EXPOSURE TO RELATIVELY HIGH CONCENTRATIONS OF SULPHUR DIOXIDE IN COMBINATION WITH SUSPENDED PARTICULATES. TO 1980, THE AMERICAN ENVIRONMENTAL PROTECTION AGENCY HAS NOT FELT IT HAS POSSESSED SUFFICIENT DATA CONCERNING THE EFFECTS OF EXPOSURE TO LOW LEVELS OF SULPHUR DIOXIDE TO APPLY A MORE STRINGENT SULPHUR DIOXIDE STANDARD. THIS CRITERIA DOCUMENT IS CURRENTLY BEING REVISED AND AN EXTERNAL REVIEW DRAFT IS CIRCULATING AMONGST VARIOUS AGENCIES AND ORGANIZATIONS.

THE PUBLICATION OF THIS NEW CRITERIA DOCUMENT, AND VARIOUS OTHER EPA INTERNAL REVIEWS, COULD RESULT IN A MORE STRINGENT SECONDARY STANDARD FOR SULPHUR DIOXIDE AND NITROGEN OXIDES BY 1982, BUT NO FIRM DEADLINE FOR ATTAINMENT OF SECONDARY STANDARDS (THOSE WHICH ADDRESS WELFARE EFFECTS RATHER THAN HEALTH EFFECTS) IS ESTABLISHED BY THE CLEAN AIR ACT OR BY EPA REGULATIONS. AMERICAN STATES ARE REQUIRED ONLY TO PURSUE ATTAINMENT OF NATIONAL AMBIENT AIR QUALITY STANDARDS WITHIN A "REASONABLE TIME".

UNFORTUNATELY, NO VEHICLE PRESENTLY EXISTS UNDER THE CLEAN AIR ACT OR CURRENT AMERICAN REGULATIONS FOR IMPOSING A RIGOROUS REQUIREMENT FOR RAPID ATTAINMENT OF THE SECONDARY, THAT IS WELFARE, STANDARD IN CASES OF ESPECIALLY WIDESPREAD AND SERIOUS IMPACTS SUCH AS THOSE ASSOCIATED WITH THE DEPOSITION OF ACIDS IN CERTAIN PARTS OF THE UNITED STATES. IT IS THEREFORE DIFFICULT FOR THE U.S. EPA TO REQUIRE PROMPT ACTION THROUGH ALTERATION OF AMBIENT STANDARDS WITHOUT A HEALTH-BASED RATIONALE. WHILE INDICATIONS OF SERIOUS HEALTH EFFECTS DO NOW EXIST IN THE SCIENTIFIC LITERATURE, EPA'S POSITION IS THAT THE AGENCY IS NOT IN POSSESSION OF SUFFICIENTLY STRONG DOCUMENTATION TO SUPPORT THE ISSUANCE OF MORE STRINGENT PRIMARY (HEALTH) STANDARDS.

## 2. STATE IMPLEMENTATION PLANS (SIP)

THE SUBCOMMITTEE IS PROBABLY FAMILIAR, FROM ITS WASHINGTON MEETINGS, WITH WHAT ARE CALLED STATE IMPLEMENTATION PLANS, OR SIP'S. THE STATE IMPLEMENTATION PLAN IS THE BASIC TOOL UNDER THE CLEAN AIR ACT BY WHICH THE U.S. EPA REQUIRES THE STATES TO ATTAIN AND MAINTAIN CERTAIN AIR QUALITY STANDARDS. THIS IS LARGELY ACCOMPLISHED THROUGH THE USE OF COMPUTER MODELS, WHICH DICTATE ACCORDING TO BEST AVAILABLE

SCIENTIFIC INFORMATION WHAT STANDARDS SHOULD BE MET. THE PROBLEM WITH THE PLANS IS THE COMPUTER MODELS NOW IN USE DO NOT, ACCORDING TO SOME EPA SCIENTISTS, TAKE INTO ACCOUNT THE FULL RANGE OF METEOROLOGICAL, TOPOGRAPHICAL, AND OTHER CONDITIONS WHICH DETERMINE THE LEVEL OF POLLUTION CONTROL WHICH ANY GIVEN STATE MAY REACH. ALSO, IF THE EPA DOES NOT AGREE WITH A STATE'S PROPOSED IMPLEMENTATION PLAN, IT MUST STEP IN AND PROMULGATE AN ALTERNATIVE, AND PROCEED TO IMPLEMENT THAT ALTERNATIVE. THE POLITICAL CLOUT REQUIRED FOR SUCH AN INTERVENTION SEEMS TO BE LACKING TO DATE WITHIN THE EPA, ESPECIALLY IN THE FACE OF ENORMOUS PRESSURES FROM THE ENERGY AND COAL LOBBIES WHICH HAVE ARISEN OVER THE PAST TWO YEARS.

FINALLY, STATE IMPLEMENTATION PLANS ARE GENERALLY DESIGNED TO MINIMIZE THE LOCAL GROUND-LEVEL EFFECTS OF AIR POLLUTION EMISSIONS. THIS APPROACH RESULTS IN AIR POLLUTION CONTROLS WHICH TEND TO DISPERSE POLLUTION UPWARD OR OUTWARD, AND THUS CONTRIBUTE TO LONG-RANGE TRANSPORT AND ACID RAIN.

### 3. NEW SOURCE PERFORMANCE STANDARDS (NSPS)

WHERE NEW THERMAL GENERATING PLANTS ARE CONCERNED, NEW SOURCE PERFORMANCE STANDARDS ARE REQUIRED IN THE UNITED STATES. THESE STANDARDS ARE MORE STRINGENT THAN THOSE APPLIED TO EXISTING PLANTS, BECAUSE OF IMPROVEMENTS IN POLLUTION CONTROL TECHNOLOGY OVER THE PAST FEW YEARS. THESE STANDARDS ARE DESIGNED TO ALLOW AN AVERAGE OF 12 LBS. OF SULPHUR DIOXIDE PER TON OF COAL FOR NEW SOURCES, VERSUS AN AVERAGE OF 83 LBS. OF SULPHUR DIOXIDE FOR EACH TON OF COAL BURNED BY EXISTING THERMAL GENERATING PLANTS IN THE UNITED STATES.

HOWEVER, DIFFICULTIES ARISE IN THAT MOST EXISTING PLANTS HAVE AN AVERAGE OF 20 USEFUL OPERATING YEARS LEFT AS AT THE PRESENT DATE. UTILITIES ARE CURRENTLY FREE TO USE THESE OLD PLANTS, WHICH MAY BE CHEAPER TO OPERATE THROUGH LACK OF ENVIRONMENTAL CONTROLS, FOR THEIR HEAVIER BASE-LOAD GENERATION, WHILE USING NEWER, MORE TIGHTLY CONTROLLED UNITS ONLY FOR MARGINAL POWER NEEDS. IN ANY CASE, THE REPLACEMENT OF OLD PLANTS WILL NOT BE RAPID ENOUGH FOR THE NEW SOURCE PERFORMANCE STANDARDS TO OFFER A SHORT RANGE SOLUTION TO THE ACID PRECIPITATION PROBLEM. ACCORDING TO EPA ESTIMATES, WE CANNOT EXPECT NEW SOURCE PERFORMANCE STANDARDS TO YIELD A DECREASE IN SULPHUR DIOXIDE EMISSIONS IN THE U.S. UNTIL ABOUT THE YEAR 2000. THIS ESTIMATE IS VALID ONLY IF POWER PLANTS CONVERTING TO COAL FROM OTHER FUELS ARE REQUIRED TO INSTALL STRINGENT SULPHUR DIOXIDE CONTROLS.

NEW SOURCE PERFORMANCE STANDARDS FOR NITROGEN DIOXIDE ARE NOT STRINGENT, PRIMARILY BECAUSE AN AFFORDABLE CONTROL TECHNOLOGY HAS NOT YET BEEN DEVELOPED. WHILE TECHNICAL CAPABILITIES IN THIS AREA ARE INCREASING RAPIDLY, THEY LAG FAR BEHIND THOSE CURRENTLY IN EXISTENCE TO CONTROL SULPHUR DIOXIDE. AS WELL, SINCE MOTOR VEHICLES ARE RESPONSIBLE FOR MUCH OF THE U.S.'S NITROGEN DIOXIDE PROBLEM, NEW SOURCE PERFORMANCE STANDARDS CAN ONLY BE EXPECTED TO DO PART OF THE JOB.

#### 4. PREVENTION OF SIGNIFICANT DETERIORATION (PSD)

FINALLY, THE 1977 CLEAN AIR ACT AMENDMENTS BROUGHT A PROGRAM CALLED THE PREVENTION OF SIGNIFICANT DETERIORATION, OR PSD, WHICH WAS DESIGNED TO PROVIDE SPECIAL PROTECTION TO AREAS WITH EXISTING AIR QUALITY THAT WAS BETTER THAN AMBIENT STANDARDS REQUIRED. WHILE THE PSD PROGRAM SEEMS GOOD IN THEORY, THE AIR QUALITY CONCERNS ADDRESSED BY IT DO NOT ENCOMPASS ALL FORMS OF AIR QUALITY DETERIORATION. THEY INVOLVE ONLY SULPHUR

DIOXIDE AND PARTICULATES, NOT SULPHATES AND NITRATES, THE SECONDARY PRODUCTS BEING DEPOSITED AS ACIDS. EVEN AFTER THE PROGRAM IS EXPANDED TO COVER THE OTHER "CRITERIA" POLLUTANTS, THE PRESENCE OF SULPHURIC OR NITRIC ACIDS IN PSD AREAS WILL BE A VIOLATION OF THE SPIRIT, BUT NOT OF THE LETTER, OF THE PSD REQUIREMENTS.

#### CANADA

LET US NOW TURN TO CANADIAN REGULATORY INSTRUMENTS.

AS SUBCOMMITTEE MEMBERS NO DOUBT ARE AWARE, THE CANADIAN APPROACH TO AIR POLLUTION CONTROL DIFFERS IN MANY FUNDAMENTAL RESPECTS FROM THE SYSTEM IN THE U.S., AND IS GENERALLY SPEAKING LESS STRINGENT. THIS MAY HAVE ARISEN THROUGH A GENERAL PERCEPTION OF THE ENVIRONMENT IN CANADA AS BEING LARGELY PRISTINE, GIVEN OUR IMMENSE WILDERNESS AREAS.

CANADA RELEASES INTO THE ATMOSPHERE ABOUT 1/5TH AS MUCH SULPHUR DIOXIDE AND 1/10TH AS MUCH NITROGEN OXIDES AS THE UNITED STATES. HOWEVER, AS YOU ALL KNOW, THERE ARE EXTREMELY LARGE CANADIAN POINT SOURCES, MOST NOTABLY THE NANTICOKE COAL-FIRED POWER PLANT ON LAKE ERIE, AND THE INCO SMELTER IN SUDBURY, TO NAME ONLY A FEW.

IT MAY BE OF INTEREST TO THE SUBCOMMITTEE TO NOTE THAT CANADIAN POLLUTION CONTROL REQUIREMENTS WERE DEVELOPED WITHOUT THE INFLUENCE OF THE REVIEW AND PRODIGING OF ENVIRONMENTAL GROUPS THAT HAS PLAYED A CENTRAL ROLE IN ENVIRONMENTAL DECISION-MAKING IN THE UNITED STATES. INTERESTED GROUPS OR ORGANIZATIONS ARE NOT GENERALLY GIVEN THE OPPORTUNITY TO MEANINGFULLY PARTICIPATE IN, OR COMMENT FORMALLY ON, FEDERAL AND PROVINCIAL REGULATORY DECISIONS, (EG. CONTROL ORDERS AND REGULATION-MAKING

UNDER THE ONTARIO ENVIRONMENTAL PROTECTION ACT), ALTHOUGH THE FEDERAL CLEAN AIR ACT IS AN EXCEPTION. ALTHOUGH THE FEDERAL ENVIRONMENT MINISTER IS CURRENTLY CONSIDERING A POLICY ON PUBLIC CONSULTATION, AND WHILE INITIATIVES HAVE BEEN TAKEN BY THE PROVINCIAL GOVERNMENT HERE IN ONTARIO, THERE ARE NO REGULATORY OR OTHER GUARANTEES THAT INPUT BY ENVIRONMENTAL AND OTHER INTERESTED ORGANIZATIONS WILL RESULT IN SPECIFIC ACTIONS BEING TAKEN BY GOVERNMENT EITHER AT THE FEDERAL OR PROVINCIAL LEVEL. AS REGARDS ACTUAL STATUTORY INSTRUMENTS, THE MAJOR PROBLEM WITH THEM IS THAT THEY'RE DISCRETIONARY IN NATURE, AND IMPOSE NO DUTIES ON GOVERNMENT TO ENFORCE ITS OWN LEGISLATION. THIS IS PARTICULARLY TRUE OF ONTARIO'S STATUTES.

1. CLEAN AIR ACT (FEDERAL)

AS CONCERNS CANADIAN REGULATORY INSTRUMENTS, THE MAJOR FEDERAL ONE IS OF COURSE THE CLEAN AIR ACT, WHICH SETS THREE RANGES OF AIR QUALITY OBJECTIVES: DESIRABLE, ACCEPTABLE, AND TOLERABLE. THE OBVIOUS PROBLEM WITH THESE OBJECTIVES IS THAT THEY ARE ONLY ADVISORY, AND HAVE NO LEGAL EFFECT UNLESS THEY ARE INCORPORATED INTO PROVINCIAL APPROVALS OR REGULATIONS. ALBERTA, MANITOBA, NEW BRUNSWICK, ONTARIO, AND SASKATCHEWAN HAVE ALL ADOPTED AMBIENT STANDARDS KEYED TO THESE OBJECTIVES, WHILE LABRADOR, NEWFOUNDLAND, NOVA SCOTIA, PRINCE EDWARD ISLAND, AND QUEBEC (IN GENERAL THE LESS IMPORTANT POLLUTERS) HAVE NOT. BRITISH COLUMBIA HAS ESTABLISHED A PERMIT SYSTEM FOR AIR POLLUTION EMISSIONS WHICH IS SIMILAR IN EFFECT TO THE AMBIENT STANDARDS APPROACH.

UNLIKE THE STATE IMPLEMENTATION PLAN APPROACH IN THE UNITED STATES, MOST PROVINCIAL REGULATION OF EMISSIONS, WHICH IMPLEMENT THE FEDERAL GOVERNMENT OBJECTIVES, IS AN INFORMAL, PRIVATELY-NEGOTIATED PROCESS. WHILE IT IS TRUE THAT WE DO HAVE THE RECENT EXAMPLE OF AN ORDER-IN-COUNCIL IMPOSING CERTAIN EMISSIONS LIMITS ON INCO LIMITED IN

ONTARIO THIS IS BY NO MEANS A GENERALLY ACCEPTED APPROACH, AND MAY WELL HAVE HAD ITS ORIGINS IN POLITICAL, RATHER THAN OBJECTIVE SCIENTIFIC, CONSIDERATIONS.

FOR EXAMPLE, A RECENT STUDY COMMISSIONED FOR THE ECONOMIC COUNCIL OF CANADA SUGGESTS THAT LOWER EMISSION TONNAGES THAN THOSE SET IN THE ORDER-IN-COUNCIL COULD HAVE BEEN SET ON A TECHNICALLY AND ECONOMICALLY FEASIBLE BASIS.

A FURTHER INFLUENCE ON THIS "NEGOTIATED PROCESS" IS THE EMPHASIS ON COST EFFECTIVENESS, WHICH IN PART RESULTS IN POLLUTANTS BEING DISPERSED RATHER THAN CONTROLLED AT SOURCE, IN ORDER TO ATTAIN AMBIENT STANDARDS. THERE ARE NO FEDERAL OR PROVINCIAL LAWS LIMITING THE USE OF TALL SMOKESTACKS IN CANADA. BECAUSE CANADA'S INDUSTRIAL DEVELOPMENT IS, IN GENERAL, LESS CONCENTRATED THAN THAT OF THE UNITED STATES, DISPERSION IS A MORE EFFECTIVE APPROACH TO THE ACHIEVEMENT OF CANADA'S NATIONAL AMBIENT GOALS.

AS REGARDS OTHER FEDERAL AIR POLLUTION CONTROL PROGRAMS, THE FEDERAL CLEAN AIR ACT ALSO IMPOWERS THE GOVERNMENT TO SET "NATIONAL EMISSION GUIDELINES", WHICH ARE NOT MANDATORY BUT ARE INTENDED TO PROMOTE UNIFORM AIR POLLUTION REGULATION BY PROVINCIAL GOVERNMENTS ACROSS CANADA. GUIDELINES ARE ISSUED ONLY FOR NEW FACILITIES, LEAVING THE PROVINCES WITH THE RESPONSIBILITY FOR DEVELOPMENT OF ANY STANDARDS TO BE APPLIED TO EXISTING SOURCES. TO DATE, GUIDELINES FOR SIX INDUSTRIAL CATEGORIES HAVE BEEN ISSUED UNDER THIS PROGRAM, BUT DO NOT INCLUDE SULPHIDE ORE OR COAL-FIRED POWER PLANTS, THE SOURCE CATEGORIES MOST RELEVANT TO THE ACID PRECIPITATION PROBLEM IN CANADA.

## 2. OTHER FEDERAL PROGRAMS

OTHER FEDERAL PROGRAMS CONTROL AUTOMOTIVE EMISSIONS, AND SET MANDATORY EMISSION STANDARDS FOR STATIONARY SOURCES OF POLLUTANTS WHICH PRESENT A SIGNIFICANT DANGER TO HEALTH OR WHICH MAY EFFECT CANADA'S COMPLIANCE WITH AN INTERNATIONAL AIR



POLLUTION CONTROL AGREEMENT. HOWEVER, NO POLLUTANTS HAVING SEVERE HEALTH CONSEQUENCES, AND WHICH ARE ALSO RELEVANT TO ACID PRECIPITATION, HAVE YET BEEN REGULATED, NOR HAS THERE BEEN ANY FEDERAL REGULATION OF SULPHUR DIOXIDE OR NITROGEN EMISSIONS PURSUANT TO ANY INTERNATIONAL AIR POLLUTION COVENANT, SINCE NO SUCH COVENANT PRESENTLY EXISTS.

IF A BILATERAL CANADA-U.S. AGREEMENT WERE TO BE REACHED CONCERNING TRANSBOUNDARY AIR POLLUTION, FEDERAL REGULATORY JURISDICTION COULD BE EXTENDED TO PERMIT DIRECT FEDERAL CONTROL. HOWEVER, SUCH AN EXPANSION OF FEDERAL REGULATORY AUTHORITY MIGHT BE RESISTED BY THE PROVINCES, ESPECIALLY IN LIGHT OF RECENT BATTLES OVER THE POWERS WHICH EACH LEVEL OF GOVERNMENT WILL POSSESS AS A RESULT OF A REFORMED CONSTITUTION.

#### THE LIKELIHOOD OF A CANADA-U.S. AGREEMENT

IN THE FACE OF THE MANY DIFFERENCES IN CANADIAN AND AMERICAN REGULATORY APPROACHES, WHAT CAN BE EXPECTED IN THE WAY OF A SIGNIFICANT CANADA-U.S. TRANSBOUNDARY AIR POLLUTION AGREEMENT?

AN EFFECTIVE AGREEMENT IS COMPLICATED BY A NUMBER OF CONSIDERATIONS. LEAVING ASIDE THE QUESTION OF WHAT PRECEDENTS FOR BILATERAL ACTION EXISTS, IT IS CERTAIN THAT ONE OR BOTH NATIONS WILL HAVE TO YIELD SOME DEGREE OF NATIONAL SOVEREIGNTY OVER DOMESTIC POLLUTION CONTROL DECISIONS, IF AN AGREEMENT WHICH CAN BE ENFORCED EFFECTIVELY IS TO BE REACHED.

OTHER DIFFICULTIES ARISE CONCERNING: 1. THE DEVELOPMENT OF AN ABATMENT AGREEMENT COMPATIBLE WITH THE FUNDAMENTALLY DIFFERENT POLLUTION CONTROL APPROACHES OF THE TWO;

2. DEVELOPMENT OF A CONCRETE ABATEMENT PROGRAM DESPITE THE SCIENTIFIC UNCERTAINTY WHICH STILL SURROUNDS MANY ASPECTS OF THE ACID PRECIPITATION PROBLEM:
3. ACHIEVING THE APPROVAL OF THE CANADIAN PROVINCES NECESSARY BEFORE CANADA COULD IMPLEMENT ANY AGREEMENT:
4. DEVELOPMENT OF THE POLITICAL WILL IN BOTH NATIONS TO SUPPORT POTENTIALLY EXTENSIVE ABATEMENT REQUIREMENTS.

PAST EXPERIENCE CONCERNING CLEANUP OF THE GREAT LAKES THROUGH BILATERAL EFFORTS SUGGESTS THAT MOST OF THE ABOVE PROBLEMS CAN BE OVERCOME, BUT THAT SUCH SOLUTIONS MIGHT TAKE YEARS OF NEGOTIATION AND COMPROMISE BETWEEN THE TWO COUNTRIES. WE BELIEVE THAT MANY ENVIRONMENTALLY-CONSCIOUS CITIZENS AND ORGANIZATIONS FEEL THAT SUCH A TIME LAG IS NOT CURRENTLY AVAILABLE TO US, AND THAT ALL POSSIBLE URGENCY AND SPEED BE LENT TO THE NEGOTIATION OF A MEANINGFUL CANADA-U.S. AGREEMENT.

FOR SUCH AN AGREEMENT TO BE EFFECTIVE A NUMBER OF DIFFERENT KINDS OF LAWS WILL ALSO BE REQUIRED TO CONTROL TRANSBOUNDARY POLLUTION IN GENERAL. OUR ANALYSIS OF THE LAWS AND POLICIES WE NEED TO EFFECT SUCH CONTROL ADDRESSES ITSELF TO PROBLEMS CONCERNED WITH THE LACK OF FREEDOM OF INFORMATION, THE LACK OF ACCESS TO COURTS AND ADMINISTRATIVE AGENCIES, AND THE LACK OF PUBLIC PARTICIPATION IN THE DECISION-MAKING PROCESS, ALL OF WHICH PROBLEMS PERVADE OUR ANTIPOLLUTION LAWS. SO AS NOT TO TAKE UP TOO MUCH MORE OF THE SUBCOMMITTEE'S TIME, I WOULD REFER YOU TO THE PRESENTATION ENTITLED "NATIONAL LEGAL REMEDIES" BY JOHN SWAIGEN, FORMER GENERAL COUNSEL TO THE CANADIAN ENVIRONMENTAL LAW ASSOCIATION, WHICH CAN BE FOUND IN THE PROCEEDINGS OF THE ACTION SEMINAR ON ACID PRECIPITATION HELD HERE IN TORONTO LAST NOVEMBER. I HAVE ALSO WITH ME, COPIES OF THE CANADIAN ENVIRONMENTAL LAW ASSOCIATION NEWSLETTER OF AUGUST, 1980, IN WHICH OUR STAFF ANALYZED DRAFT TREATIES PROPOSED BY THE CANADIAN AND U.S. BAR ASSOCIATIONS.

RECENT RESEARCH

I HAD HOPED TO REVIEW FOR THE SUBCOMMITTEE A NUMBER OF PIECES OF RESEARCH THAT WE HAVE FOUND TO BE OF ASSISTANCE IN UNDERSTANDING THE ACID PRECIPITATION PROBLEM. HOWEVER, THE LIMITED NOTICE THAT WE WERE GIVEN OF THIS MEETING ONLY ALLOWS ME TO VERY BRIEFLY MENTION A FEW ITEMS.

THE FIRST TWO ITEMS APPEARED IN THE MAY AND JUNE, 1980 ISSUES OF "ENVIRONMENT" MAGAZINE, (VOLUME 22, NUMBERS 4 AND 5). THE MAY ARTICLE DEALT WITH CAUSES AND CONSEQUENCES OF ACID PRECIPITATION, AND PRESENTS AN EXCELLENT SUMMARY OF THE AMERICAN SCIENTIFIC AND REGULATORY SITUATION. THE JUNE ISSUE CONTAINS AN EXCELLENT ARTICLE ON THE PROBLEM OF TRANSBOUNDARY POLLUTION, WHICH SHEDS FURTHER LIGHT ON SOME OF THE COMMENTS I HAVE MADE ABOVE ON THE VARIOUS CANADIAN AND AMERICAN REGULATORY PROGRAMS, AND THEIR STRENGTHS AND WEAKNESSES.

AS I PRESUME THE SUBCOMMITTEE'S WORK TO BE ONGOING, I WOULD DRAW THEIR ATTENTION TO THE VARIOUS STUDIES ON THE EFFECTS OF ACIDIC PRECIPITATION ON MODEL FOREST AND CROP SYSTEMS NOW BEING CARRIED OUT BY THE ENVIRONMENTAL RESEARCH LABORATORY OF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AT CORVALLIS, OREGON. SOME OF THESE STUDIES HAVE BEEN IN PROGRESS SINCE 1976, AND RESULTS ARE BEGINNING TO SEE THE LIGHT OF DAY THIS YEAR.

REGARDING THE ECONOMIC COSTS OF CONTROLLING ACIDIC PRECIPITATION, I WOULD LIKE TO INDICATE TO THE COMMITTEE A FEW FIGURES WHICH, WHILE NOT FINAL, INDICATE THE ORDER OF MAGNITUDE OF ECONOMIC EXPENDITURE WE ARE TALKING ABOUT. RECENT DATA I RECEIVED FROM THE U.S. ENVIRONMENTAL PROTECTION AGENCY INDICATES THAT A LIMESTONE SCRUBBING SYSTEM FOR A NEW 500 MEGAWATT POWER PLANT, WHICH WOULD REMOVE ABOUT 90% OF THE SULPHUR FROM THE COAL BURNED (THIS COAL BEING ABOUT 3½% SULPHUR IN CONTENT), WOULD HAVE A

CAPITAL COST OF APPROXIMATELY \$135 PER KILOWATT, OR \$67,500,000 FOR THE ENTIRE PLANT. MY INFORMATION SUGGESTS THAT TO RETROFIT A PLANT WOULD COST ABOUT 30% MORE, ALTHOUGH THIS IS A ROUGH FIGURE. AS SUBCOMMITTEE MEMBERS ARE NO DOUBT AWARE, SOME 350 NEW PLANTS ARE PLANNED FOR THE UNITED STATES BY THE TURN OF THE CENTURY, AND WHILE I WOULD NOT SUGGEST THAT A SIMPLE MULTIPLICATION WOULD GIVE A TOTAL FIGURE FOR THE SCRUBBING REQUIREMENTS OF THOSE PLANTS, IT WILL GIVE YOU AN IDEA OF THE ORDER OF ECONOMIC MAGNITUDE INVOLVED.

IN CANADA, PRELIMINARY SCENARIOS HAVE BEEN DEVELOPED FOR CONTROL OF THERMAL GENERATING STATIONS. THE THREE SCENARIOS DEVELOPED TO DATE BY CONSULTANTS TO ENVIRONMENT CANADA ENVISAGE THE FOLLOWING CAPITAL COSTS NEEDED TO CONTROL ALL THERMAL SOURCES IN CANADA NOW EXISTING AND TO BE BUILT UP TO 1990:

THE FIRST SCENARIO, CALLED THE "LAX" SCENARIO, SUGGESTS THAT TO REDUCE SULPHUR DIOXIDE EMISSIONS BY 45%, A COST OF \$1.3 BILLION WOULD BE REQUIRED FOR THE ENTIRE COUNTRY. THE SECOND SCENARIO, CALLED THE "MODERATE" SCENARIO, SUGGESTS THAT FOR A 55% REDUCTION IN SULPHUR DIOXIDE, A COST OF \$1.5 BILLION WOULD BE INVOLVED. THE FINAL SCENARIO, CALLED THE "STRICT" SCENARIO, INDICATES THAT \$2 BILLION WOULD BE REQUIRED TO ACHIEVE AN 87% REDUCTION IN SULPHUR DIOXIDE EMISSIONS BY THERMAL GENERATING STATIONS IN CANADA. THESE THREE SCENARIOS WILL APPARENTLY RESULT IN 6%, 7% AND 10% INCREASES RESPECTIVELY IN HYDRO REVENUES REQUIRED. MY INFORMATION ALSO SUGGESTS THAT THE COST FIGURES MAY BE UP TO 40% TOO HIGH, AND THAT FURTHER WORK NEEDS TO BE DONE ON THE FIGURES. THIS LATTER COMMENT GIVES YOU AN INDICATION OF THE DEGREE OF SOPHISTICATION (OR LACK THEREOF) TO WHICH THE ECONOMIC ANALYSIS OF ACIDIC PRECIPITATION CONTROL IS SUBJECTED CURRENTLY.

I HOPE THAT THE ABOVE COMMENTS ARE OF USE TO THE SUBCOMMITTEE, AND I THANK YOU FOR YOUR ATTENTION.

ALL OF WHICH IS RESPECTFULLY SUBMITTED,

A handwritten signature in cursive script, appearing to read "Michael Perley". The signature is written in black ink and is positioned below the typed text "ALL OF WHICH IS RESPECTFULLY SUBMITTED,".

MICHAEL PERLEY,  
EXECUTIVE DIRECTOR  
CANADIAN ENVIRONMENTAL LAW RESEARCH FOUNDATION

ON BEHALF OF THE CANADIAN ENVIRONMENTAL LAW RESEARCH FOUNDATION AND THE CANADIAN ENVIRONMENTAL LAW ASSOCIATION.