

NAF FIRE EXTINGUISHANT

Presentation by
BY NORTH AMERICAN FIRE GUARDIAN TECHNOLOGY INC.

IN REPRESENTING OUR COMPANY AND ITS PRODUCTS AT VARIOUS SYMPOSIUMS AND CONFERENCES IN NORTH AMERICA AND ABROAD, I HAVE LEARNED THAT MANY COMPANIES, FAR MORE THAN I HAD EVER EXPECTED, ARE SEARCHING FOR THE IDEAL PRODUCT.

MOST IF NOT ALL OF YOU WILL AGREE THAT HALON **1301** AND **1211** HAVE BEEN CONSIDERED PERFECT FIRE EXTINGUISHANTS AND SUPPRESSANTS FOR YEARS, WITH SOME EXCEPTIONS.

FROM THE BEGINNING OF THE CENTURY YOU SCIENTISTS **HAVE** BEEN TELLING US THAT WE MUST DO SOMETHING ABOUT OUR ENVIRONMENT. IT WAS IN THE EIGHTIES THAT WE FOUND THAT YOU WERE RIGHT.

THERE WERE MANY PROBLEMS WITH ORIGINAL FIRE SUPPRESSING CHEMICALS THAT COULD ONLY HAVE BEEN DISCOVERED THROUGH REAL LIFE EXPERIENCES. ONLY RECENTLY HAS THE PUBLIC BECOME AWARE OF THE PROBLEMS AND SIDE EFFECTS OF THE PRODUCTS THAT WE TRUSTED, INCLUDING DAMAGE TO THE ENVIRONMENT. HOW CAN WE BE SURE THAT HISTORY WILL NOT REPEAT ITSELF WITH THE NEW PRODUCTS BEING DEVELOPED. IS IT BETTER THE DEVIL YOU KNOW THAN THE DEVIL YOU DON'T KNOW?

WE HAVE NOW LEARNED, BECAUSE OF THE EVOLUTION OF TECHNOLOGY, THAT THE OLD TESTING PROCEDURES WERE LACKING IN ACCURACY. AS A RESULT OF THE EVOLUTION, NEW PRODUCTS APPLYING FOR APPROVAL FROM REGULATORY AUTHORITIES ARE HAVING TO GO THROUGH MUCH MORE COMPLEX AND DIFFICULT PROCEDURES THAN EVER BEFORE.

IT IS VERY POSSIBLE, IN FACT, THAT THE OLDER PRODUCTS WOULD NOT PASS THE PRESENT TESTING PROCEDURES.

TODAY, THE INDUSTRY IS CONFRONTED **WITH** THE SEARCH FOR EXTINGUISHANTS AND SUPPRESSANTS THAT MUST CONFORM TO A WIDE VARIETY OF PROPERTIES:

- FIRE SUPPRESSION EFFICIENCY
- OZONE DEPLETION POTENTIAL
- GREENHOUSE WARMING POTENTIAL
- SUPPRESSANT RESIDUE LEVEL
- ELECTRICAL CONDUCTIVITY
- METAL CORROSION
- MATERIAL COMPATIBILITY
- STABILITY UNDER LONG-TERM STORAGE
- TOXICITY BOTH FROM INHALATION OF AND DIRECT CONTACT **WITH** THE CHEMICAL AND ITS COMBUSTION BY-PRODUCTS

IN ADDITION TO THESE PROPERTIES, THERE IS A PRACTICAL BENEFIT IN IDENTIFYING CHEMICALS AND CHEMICAL COMPOUNDS THAT CAN BE 'DROP IN' REPLACEMENTS TO CURRENT SUPPRESSANTS.

THIS IS WHERE OUR NAF FIRE EXTINGUISHING AGENTS COME IN. THEY **HAVE** RISEN TO THE CHALLENGE OF THE NEW TESTING PROCEDURES.

- WE **HAVE** PROVEN OUR FIRE SUPPRESSION EFFICIENCY ... WE HAVE JUST RECEIVED U.L.C. APPROVAL.
- ORIGINAL NAF EXTINGUISHANTS USED CFCS. ALTHOUGH THE O.D.P. VALUE OF CFC IS LISTED AS **1**, THE DETOXIFYING ADDITIVE OF NAF EXTINGUISHANTS RESULTED IN THE RECORDING OF AN O.D.P. VALUE OF **0.95**. NOW THAT OUR PRODUCTS INCORPORATE THE NEW HCFCs THE O.D.P. VALUES OF OUR EXTINGUISHANTS HAVE BEEN LOWERED TO BETWEEN **0.77** AND **0.50**, DEPENDING ON THE FOWULATION. HALON **1301** IS RECORDED AS HAVING AN O.D.P. VALUE OF **10** AND **1211** AS **3**.
- OUR PRODUCT'S GREENHOUSE WARMING POTENTIAL IS BETWEEN **131** AND **1.76** (BASED ON FREON **11** CALCULATION OF **1**).
- THE SUPPRESSANT RESIDUE LEVEL IS NIL.
- THERE IS NO ELECTRICAL CONDUCTIVITY.
- THERE IS NO METAL CORROSION.
- THE MATERIAL COMPATABILITY OF NAF IS THE SAME AS **1301** AND **1211**.
- OUR PRODUCTS REMAINED STABLE AFTER TWO YEARS IN STORAGE.
- OUR PRODUCTS ACL_{50} IS EQUAL TO 400,000 PPM.

NOT ONLY CAN NAF EXTINGUISHANTS CONFORM TO THE WIDE VARIETY OF PROPERTIES REQUIRED TO BE CONSIDERED AN ALTERNATIVE TO THE MORE OZONE-DEPLETING HALONS CURRENTLY ON THE MARKET, BUT THEY CAN GO **THAT** EXTRA MILE ... THEY ARE “DROPIN” REPLACEMENTS AS WELL.

AFTER YEARS OF STRUGGLING TO GET OUR EXTINGUISHANTS THE RECOGNITION THEY DESERVE, FROM THE INDUSTRY ITSELF AS WELL AS REGULATORY AUTHORITIES, WE ARE FINALLY MAKING SOME SERIOUS GROUND.

WE RECENTLY RECEIVED UNDERWRITER’S LABORATORY OF CANADA APPROVAL OF A HAND-HELD UNIT USING A PYRENE EXTINGUISHER WITH OUR NAF EXTINGUISHANT ... CALLED MODEL NAF-6. THE EXTINGUISHER **HAS** BEEN DETERMINED TO BE SUITABLE FOR CLASS A AND B FIRES AND NOT HAZARDOUS FOR USE ON FIRE INVOLVING ENERGIZED ELECTRICAL EQUIPMENT. THE MODEL NAF-6 UNIT HAS BEEN ASSIGNED 1-A, 2-B AND C RATINGS AND CLASSIFICATIONS. THIS APPROVAL WILL **HAVE** A SIGNIFICANT IMPACT ON THE FUTURE SALES OF THE COMPANY.

IN ADDITION, THE GOVERNMENT OF SWEDEN, WHICH IS KNOWN TO HAVE SOME OF THE STRICTEST REGULATIONS IN THE WORLD REGARDING THE USE OF CFC’S, HAS EXEMPT OUR FIRE EXTINGUISHANTS FROM CERTAIN OF THEIR REGULATIONS. THE ENVIRONMENT MINISTRY OF SWEDEN **HAS** DETERMINED THAT NAF SHOULD RECEIVE THIS EXEMPTION IN VIEW OF THE BRIDGING ASPECT OF NAF BETWEEN HALONS AND EXPECTED SUBSTITUTES, AND THE ABSENCE OF ANY OTHER VALID COMMERCIALY AVAILABLE ALTERNATIVE CURRENTLY ON THE MARKET THAT IS ABLE TO OFFER SUCH REDUCED O.D.P. AND TOXICITY LEVELS WITH THE SAME PERFORMANCE CAPABILITY. THE IMMEDIATE EFFECT IS THAT THE COMPANY’S NAF S EXTINGUISHANT WILL BE PERMITTED

FOR "ESSENTIAL USES". THIS MEANS THAT ENVIRONMENTALLY SAFE NAFF S CAN NOW BE USED TO REPLACE HALON **1301** IN EXISTING FLOOD SYSTEMS IN SWEDEN.

NORTH AMERICAN FIRE GUARDIAN IS COMMITTED TO PRODUCING THE SAFEST PRODUCTS ON THE MARKET. WE ARE CURRENTLY INCORPORATING HCFC **22** INTO OUR EXTINGUISHANTS AND HAVE SUCCESSFULLY TESTED OUR PRODUCTS **WITH** THE NEW HCFC **123**, WHICH IS NOT CURRENTLY COMMERCIALY AVAILABLE. WHEN IT IS, I CAN ASSURE YOU IT WILL BE INCORPORATED INTO OUR FORMULAS, AND AS LOWER OZONE DEPLETING HCFC'S ARE PRODUCED, THEY TOO WILL BE INCORPORATED INTO FUTURE NAF FORMULATIONS TO YIELD EVEN SAFER PRODUCTS FOR THE ENVIRONMENT THAT INCREASE SAFETY AND REDUCE THE RISK TO LIFE AND PROPERTY.



SEARCH FOR AN ALTERNATIVE TO HALON

CRITERIA	NAF PERFORMANCE
• FIRE SUPPRESSION EFFICIENCY	• U.L.C. APPROVED
• OZONE DEPLETION POTENTIAL	• 0.80 to 0.50
• GREENHOUSE WARMING POTENTIAL	• 1.31 to 1.76
• SUPPRESSANT RESIDUE LEVEL	• NIL
• ELECTRICAL CONDUCTIVITY	• NIL
• METAL CORROSION	• NIL
• MATERIAL COMPATIBILITY	• SAME AS 1301 AND 1211
• STABILITY UNDER LONG-TERM STORAGE	• STABLE AFTER TWO YEARS IN STORAGE
• TOXICITY BOTH FROM INHALATION OF AND	• ACL₅₀ = 400,000 PPM
• DIRECT CONTACT WITH THE CHEMICAL AND	
• ITS COMBUSTION BY-PRODUCTS	

PLUS, NAF FIRE EXTINGUISHANTS ARE DROP-IN REPLACEMENTS FOR 1301 AND 1211